40/pt. 300-399/989

code of federal regulations

Protection of Environment

40

PARTS 300 TO 399
Revised as of July 1, 1989

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Protection of Environment

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PARTS 300 to 399

Revised as of July 1, 1989

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Published by
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as a Special Edition of
the Federal Register

1985

U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON: 1989

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402

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To cite the regulations in this volume use title, part and section number. Thus, 40 CFR 300.1 *refers to Title 40, Part 300, section 1.*

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The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The Code is divided into 50 titles which represent broad areas subject to Federal regulation. Each title is divided into chapters which usually bear the name of the issuing agency. Each chapter is further subdivided into parts covering specific regulatory areas.

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Title 1 through Title 16	as of January 1
Title 17 through Title 27	as of April 1
Title 28 through Title 41	as of July 1
Title 42 through Title 50	as of October 1

The appropriate revision date is printed on the cover of each volume.

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The contents of the Federal Register are required to be judicially noticed (44 U.S.C. 1507). The Code of Federal Regulations is prima facie evidence of the text of the original documents (44 U.S.C. 1510).

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MARTHA L. GIRARD,
Acting Director,
Office of the Federal Register.

July 1, 1989.

THIS TITLE

Title 40—Protection of Environment is composed of fourteen volumes. The parts in these volumes are arranged in the following order: Parts 1-51, Part 52, Parts 53-60, Parts 61-80, Parts 81-85, Parts 86-99, Parts 100-149, Parts 150-189, Parts 190-299, Parts 300-399, Parts 400-424, Parts 425-699, Parts 700-789 and Part 790 to End. A derivation table appears in the volume containing Parts 1-51. The contents of these volumes represent all current regulations codified under this title of the CFR as of July 1, 1989.

Chapter I—Environmental Protection Agency appears in all fourteen volumes. A Pesticide Tolerance Commodity/Chemical Index appears in Parts 150-189. A Toxic Substances Chemical—CAS Number Index appears in Parts 700-789 and Part 790 to End. Distribution Tables appear in the volumes containing Parts 100-149 and Parts 190-299. Redesignation Tables appear in the volumes containing Parts 1-51, Parts 81-85, Parts 86-99, Parts 150-189, Parts 700-789 and Part 790 to End. Regulations issued by the Council on Environmental Quality appear in the volume containing Part 790 to End.

For this volume, Miriam S. Braganca was Chief Editor. The Code of Federal Regulations publication program is under the direction of Richard L. Claypoole, assisted by Ruth C. Pontius.

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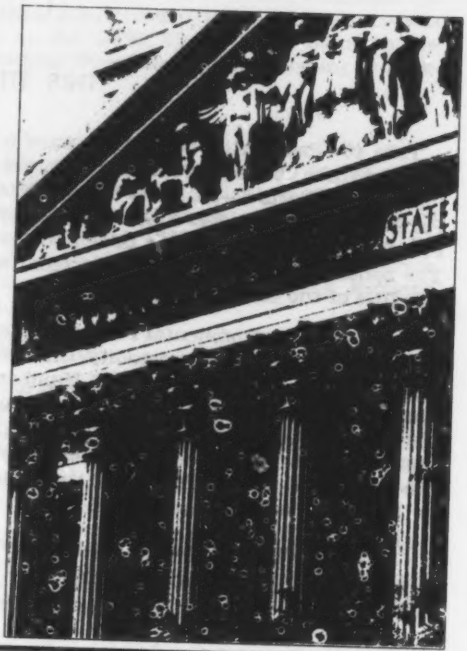

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AUTHORITY: 42 U.S.C. 9605; 42 U.S.C. 9620; 33 U.S.C. 1321(c)(2); E.O. 11735 (38 FR 21243); E.O. 12580 (52 FR 2923).

Subpart A—Introduction

SOURCE: 50 FR 47951, Nov. 20, 1985, unless otherwise noted.

§ 300.1 Purpose and objectives.

The purpose of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP or Plan) is to effectuate the response powers and responsibilities created by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the authorities established by section 311 of the Clean Water Act (CWA), as amended.

§ 300.2 Authority.

The Plan is required by section 105 of CERCLA, 42 U.S.C. 9605, and by section 311(c)(2) of the CWA, as amended, 33 U.S.C. 1321(c)(2). In Executive Order 12316 (46 FR 42237), the President delegated to the Environmental Protection Agency the responsibility for the amendment of the NCP and all of the other functions vested in the President by section 105 of CERCLA. Amendments to the NCP shall be coordinated for notice and comment prior to publication with members of the National Response Team, including the Federal Emergency Management Agency and the Nuclear Regulatory Commission, in order to avoid inconsistent or duplicative requirements in the emergency planning responsibilities of those agencies.

§ 300.3 Scope.

(a) The Plan applies to all Federal agencies and this plan is in effect for:

(1) Discharges or substantial threats of discharges of oil to or upon the navigable waters of the United States and adjoining shorelines, for the contiguous zone, and the high seas beyond the contiguous zone in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act). (See sections 311(b)(1) and 502(7) of the CWA.)

(2) Releases or substantial threats of releases of hazardous substances into the environment, and releases or substantial threats of releases of pollutants or contaminants which may present an imminent and substantial danger to public health or welfare.

(b) The Plan provides for efficient, coordinated, and effective response to discharges of oil and releases of hazardous substances, pollutants, and contaminants in accordance with the authorities of CERCLA and the CWA. It provides for:

(1) Division and specification of responsibilities among the Federal, State, and local governments in response actions, and appropriate roles for private entities.

(2) The national response organization that may be brought to bear in response actions, including description of the organization, response personnel, and resources that are available to respond.

(3) The establishment of requirements for Federal regional and Federal local contingency plans, and encouragement of pre-planning for response by other levels of government.

(4) Procedures for undertaking removal operations pursuant to section 311 of the CWA.

(5) Procedures for undertaking response operations pursuant to CERCLA.

(6) Designation of trustees for natural resources for purposes of CERCLA.

(7) National policies and procedures for the use of dispersants and other chemicals in removal and response actions.

(c) In implementing this Plan, consideration shall be given to the Joint Canada/U.S. Contingency Plan; the U.S./Mexico Joint Contingency Plan; and international assistance plans and agreements, security regulations and responsibilities based on international agreements, Federal statutes, and executive orders. Actions taken pursuant to this Plan shall conform to the provisions of international joint contingency plans, where they are applicable. The Department of State should be consulted prior to taking any action which may affect its activities.

§ 300.4 Application.

The Plan is applicable to response taken pursuant to the authorities under CERCLA and section 311 of the CWA.

§ 300.5 Abbreviations.

(a) Department and Agency Title Abbreviations:

DOC—Department of Commerce
DOD—Department of Defense
DOE—Department of Energy
DOI—Department of the Interior
DOJ—Department of Justice
DOL—Department of Labor
DOS—Department of State
DOT—Department of Transportation
EPA—Environmental Protection Agency

FEMA—Federal Emergency Management Agency
HHS—Department of Health and Human Services
NIOSH—National Institute for Occupational Safety and Health
NOAA—National Oceanic and Atmospheric Administration
USCG—U.S. Coast Guard
USDA—U.S. Department of Agriculture

(b) Operational Title Abbreviations:

ERT—Environmental Response Team
FCO—Federal Coordinating Officer
NRC—National Response Center
NRT—National Response Team
NSF—National Strike Force
OSC—On-Scene Coordinator
PAAT—Public Affairs Assist Team
PIAT—Public Information Assist Team
RPM—Remedial Project Manager
RRC—Regional Response Center
RRT—Regional Response Team
SSC—Scientific Support Coordinator

§ 300.6 Definitions.

Terms not defined in this section have the meaning given by CERCLA or the CWA.

Activation means notification by telephone or other expeditious manner or, when required, the assembly of some or all appropriate members of the RRT or NRT.

Applicable requirements means those Federal requirements that would be legally applicable, whether directly, or as incorporated by a Federally authorized State program, if the response actions were not undertaken pursuant to CERCLA section 104 or 106.

CERCLA or "Superfund" is the Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

Claim, as defined by section 101(4) of CERCLA, means a demand in writing for a sum certain.

Coastal waters, for the purposes of classifying the size of discharges, means the waters of the coastal zone except for the Great Lakes and specified ports and harbors on inland rivers.

Coastal zone, as defined for the purpose of this Plan, means all U.S. waters subject to the tide, U.S. waters of the Great Lakes, specified ports and harbors on the inland rivers, waters of the contiguous zone, other waters of the high seas subject to this Plan, and the land surface or land substrata, ground waters, and ambient air proximal to those waters. The term coastal zone delineates an area of Federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in Federal regional contingency plans.

Contiguous zone means the zone of the high seas, established by the United States under Article 24 of the Convention on the Territorial Sea and Contiguous Zone, which is contiguous to the territorial sea and which extends nine miles seaward from the outer limit of the territorial sea.

Discharge, as defined by section 311(a)(2) the of CWA, includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil. For purposes of this Plan, discharge shall also mean substantial threat of discharge.

Drinking water supply, as defined by section 101(7) of CERCLA, means any raw or finished water source that is or may be used by a public water system (as defined in the Safe Drinking Water Act) or as drinking water by one or more individuals.

Environment, as defined by section 101(8) of CERCLA, means the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson Fishery Conservation and Management Act; and any other surface water, ground water, drinking water supply, land surface and subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

Facility, as defined by section 101(9) of CERCLA, means any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

Feasibility study is a process undertaken by the lead agency (or responsible party if the responsible party will be developing a cleanup proposal) for developing, evaluating, and selecting remedial actions which emphasizes data analysis. The feasibility study is generally performed concurrently and in an interdependent fashion with the remedial investigation. In certain situations, the lead agency may require potentially responsible parties to conclude initial phases of the remedial investigation prior to initiation of the feasibility study. The feasibility study process uses data gathered during the remedial investigation. These data are used to define the objectives of the response action and to broadly develop remedial action alternatives. Next, an initial screening of these alternatives is required to reduce the number of alternatives to a workable number. Finally, the feasibility study involves a detailed analysis of a limited number of alternatives which remain after the initial screening stage. The factors that are considered in screening and analyzing the alternatives are public health, economics, engineering practicality, environmental impacts, and institutional issues.

Federally permitted release, as defined by section 101(10) of CERCLA, means discharges in compliance with a permit under section 402 of the Federal Water Pollution Control Act; discharges resulting from circumstances identified and reviewed and made part of the public record with respect to a permit issued or modified under section 402 of the Federal Water Pollution Control Act and subject to a condition of such permit; continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the Federal Water Pollution Control Act, which are caused by events occurring within the scope of relevant operating or treatment systems; discharges in compliance with a legally enforceable permit under section 404 of the Federal Water Pollution Control Act; releases in compliance with a legally enforceable final permit issued pursuant to section 3005 (a) through (d) of the Solid Waste Disposal Act from a hazardous waste treatment, storage, or disposal facility when such permit specifically identifies the hazardous substances and makes such substances subject to a standard of practice, control procedure or bioassay limitation or condition, or other control on the hazardous substances in such releases; any release in compliance with a legally enforceable permit issued under section 102 or 103 of the Marine Protection, Research, and Sanctuaries Act of 1972; any injection of fluids authorized under Federal underground injection control programs or State programs submitted for Federal approval (and not disapproved by the Administrator of EPA) pursuant to Part C of the Safe Drinking Water Act; any emission into the air subject to a permit or control regulation under section 111, section 112, Title 1 Part C, Title 1 Part D, or State implementation plans submitted in accordance with section 110 of the Clean Air Act (and not disapproved by the Administrator of EPA), including any schedule or waiver granted, promulgated, or approved under these sections; any injection of fluids or other materials authorized under applicable State law for the purpose of stimulating or treating wells for the production of crude oil, natural gas, or water, for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or which are brought to the surface in conjunction with the production of crude oil or natural gas and which are reinjected; the introduction of any pollutant into a publicly owned treatment works when such pollutant is specified in and in compliance with applicable pretreatment standards of section 307(b) or (c) of the CWA and enforceable requirements in a pretreatment program submitted by a State or municipality for Federal approval under section 402 of such Act; and any release of source, special nuclear, or by-product material, as those terms are defined in the Atomic Energy Act of 1954, in compliance with a legally enforceable license, permit, regulation, or order issued pursuant to the Atomic Energy Act of 1954.

First Federal official means the first Federal representative of a participating agency of the National Response Team to arrive at the scene of a discharge or a release. This official coordinates activities under this Plan and may initiate, in consultation with the OSC, any necessary actions until the arrival of the predesignated OSC. A State with primary jurisdiction over a site covered by a cooperative agreement will act in the stead of the First Federal official for any incident at the site.

Fund or Trust Fund means the Hazardous Substance Response Trust Fund established by section 221 of CERCLA.

Ground water, as defined by section 101(12) of CERCLA, means water in a saturated zone or stratum beneath the surface of land or water.

Hazardous substance, as defined by section 101(14) of CERCLA, means: Any substance designated pursuant to section 311(b)(2)(A) of the CWA; any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress); any toxic pollutant listed under section 307(a) of the CWA; any hazardous air pollutant listed under section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Inland waters, for the purposes of classifying the size of discharges, means those waters of the U.S. in the inland zone, waters of the Great Lakes, and specified ports and harbors on inland rivers.

Inland zone means the environment inland of the coastal zone excluding the Great Lakes and specified ports and harbors of inland rivers. The term inland zone delineates the area of Federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreement and identified in Federal regional contingency plans.

Lead agency means the Federal agency (or State agency operating pursuant to a contract or cooperative agreement executed pursuant to section 104(d)(1) of CERCLA) that has primary responsibility for coordinating response action under this Plan. A Federal lead agency is the agency that provides the OSC or RPM as specified elsewhere in this Plan. In the case of a State as lead agency, the State shall carry out the same responsibilities delineated for OSCs/RPMs in this Plan (except coordinating and directing Federal agency response actions).

Management of migration means actions that are taken to minimize and mitigate the migration of hazardous substances or pollutants or contaminants and the effects of such migration. Management of migration actions may be appropriate where the hazardous substances or pollutants or contaminants are no longer at or near the area where they were originally located or situations where a source cannot be adequately identified or characterized. Measures may include, but are not limited to, provision of alternative water supplies, management of a plume of contamination, or treatment of a drinking water aquifer.

Natural resources, as defined by section 101(16) of CERCLA, means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of fishery conservation zones established by the Magnuson Fishery Conservation and Management Act), any State or local government, or any foreign government.

Offshore facility, as defined by section 101(17) of CERCLA and section 311(a)(11) of the CWA, means any facility of any kind located in, on, or under any of the navigable waters of the U.S. and any facility of any kind which is subject to the jurisdiction of the U.S. and is located in, on, or under any other waters, other than a vessel or a public vessel.

Oil, as defined by section 311(a)(1) of the CWA, means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

Oil pollution fund means the fund established by section 311(k) of the CWA.

On-Scene Coordinator (*OSC*) means the Federal official predesignated by the EPA or USCG to coordinate and direct Federal responses under Subpart E and removals under Subpart F of this Plan; or the DOD official designated to coordinate and direct the removal actions from releases of hazardous substances, pollutants, or contaminants from DOD vessels and facilities.

Onshore facility, (a) as defined by section 101(18) of CERCLA, means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land or non-navigable waters within the United States; and (b) as defined by section 311(a)(10) of the CWA, means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land within the United States other than submerged land.

Operable Unit is a discrete part of the entire response action that decreases a release, threat of release, or pathway of exposure.

Person, as defined by section 101(21) of CERCLA, means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, U.S. government, State, municipality, commission, political subdivision of a State, or any interstate body.

Plan means the National Oil and Hazardous Substances Pollution Contingency Plan published under section 311(c) of the CWA and revised pursuant to section 105 of CERCLA.

Pollutant or contaminant, as defined by section 104(a)(2) of CERCLA, shall include, but not be limited to, any element, substance, compound, or mixture, including disease causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingesting through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction), or physical deformation in such organisms or their offspring. The term does not include petroleum, including crude oil and any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under section 101(14) (A) through (F) of CERCLA, nor does it include natural gas, liquified natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and synthetic gas). For purposes of Subpart F of this Plan, the term pollutant or contaminant means any pollutant or contaminant which may present an imminent and substantial danger to public health or welfare.

Release, as defined by section 101(22) of CERCLA, means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injection, escaping, leaching, dumping, or disposing into the environment, but excludes: Any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons; emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; release of source, byproduct or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such act, or, for the purpose of section 104 of CERCLA or any other response action, any release of source, byproduct, or special nuclear material from any processing site designated under section 122(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978; and the normal application of fertilizer. For the purpose of this Plan, release also means substantial threat of release.

Relevant and appropriate requirements are those Federal requirements that, while not "applicable," are designed to apply to problems sufficiently similar to those encountered at CERCLA sites that their application is appropriate. Requirements may be relevant and appropriate if they would be "applicable" but for jurisdictional restrictions associated with the requirement.

Remedial investigation is a process undertaken by the lead agency (or responsible party if the responsible party will be developing a cleanup proposal) which emphasizes data collection and site characterization. The remedial investigation is generally performed concurrently and in an interdependent fashion with the feasibility study. However, in certain situations, the lead agency may require potentially responsible parties to conclude initial phases of the remedial investigation prior to initiation of the feasibility study. A remedial investigation is undertaken to determine the nature and extent of the problem presented by the release. This includes sampling and monitoring, as necessary, and includes the gathering of sufficient information to determine the necessity for and proposed extent of remedial action. Part of the remedial investigation involves assessing whether the threat can be mitigated or minimized by controlling the source of the contamination at or near the area where the hazardous substances or pollutants or contaminants were originally located (source control remedial actions) or whether additional actions will be necessary because the hazardous substances or pollutants or contaminants have migrated from the area of their original location (management of migration).

Remedial Project Manager (RPM) means the Federal official designated by EPA (or the USCG for vessels) to coordinate, monitor, or direct remedial or other response activities under Subpart F of this Plan; or the Federal official DOD designates to coordinate and direct Federal remedial or other response actions resulting from releases of hazardous substances, pollutants, or contaminants from DOD facilities or vessels.

Remedy or remedial action, as defined by section 101(24) of CERCLA, means those actions consistent with permanent remedy taken instead of, or in addition to, removal action in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, trenches or ditches, clay cover, neutralization, cleanup of released hazardous substances or contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, onsite treatment or incineration, provision of alternative water supplies, and any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment. The term includes the costs of permanent relocation of residents and businesses and community facilities where the President determines that, alone or in combination with other measures, such relocation is more cost-effective than and environmentally preferable to the transportation, storage, treatment, destruction, or secured disposition off-site of such hazardous substances, or may otherwise be necessary to protect the public health or welfare. The term does not include off-site transport of hazardous substances or contaminated materials unless the President determines that such actions: are more cost-effective than other remedial actions; will create new capacity to manage in compliance with Subtitle C of the Solid Waste Disposal Act, hazardous substances in addition to those located at the affected facility; or are necessary to protect public health or welfare or the environment from a present or potential risk which may be created by further exposure to the continued presence of such substances or materials.

Remove or removal, as defined by section 311(a)(8) of the CWA, refers to removal of oil or hazardous substances from the water and shorelines or the taking of such other actions as may be necessary to minimize or mitigate damage to the public health, welfare, or the environment. As defined by section 101(23) of CERCLA, remove or removal means the cleanup or removal of released hazardous substances from the environment; such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances; the disposal of removal material or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or the environment which may otherwise result from such release or threat of release. The term includes, in addition, without being limited to, security fencing or other measures to limit access, provision of alternative water supplies, temporary evacuation and housing of threatened individuals not otherwise provided for, action taken under section 104(b) of CERCLA, and any emergency assistance which may be provided under the Disaster Relief Act of 1974.

Respond or response, as defined by section 101(25) of CERCLA, means remove, removal, remedy, or remedial action.

Site Quality Assurance and Sampling Plan is a written document, associated with site sampling activities, which presents in specific terms the organization (where applicable), objectives, functional activities, and specific quality assurance (QA) and quality control (QC) activities designed to achieve the data quality goals of a specific project(s) or continuing operation(s). The QA Project Plan is prepared for each specific project or continuing operation (or group of similar projects of continuing operations). The QA Project Plan will be prepared by the responsible program office, regional office, laboratory, contractor, recipient of an assistance agreement, or other organization.

Size classes of discharges refers to the following size classes of oil discharges which are provided as guidance to the OSC and serve as the criteria for the actions delineated in Subpart E. They are not meant to imply associated degrees of hazard to public health or welfare, nor are they a measure of environmental damage. Any oil discharge that poses a substantial threat to the public health or welfare or results in critical public concern shall be classified as a major discharge regardless of the following quantitative measures;

(a) *Minor discharge* means a discharge to the inland waters of less than 1,000 gallons of oil or a discharge to the coastal waters of less than 10,000 gallons of oil.

(b) *Medium discharge* means a discharge of 1,000 to 10,000 gallons of oil to the inland waters or a discharge of 10,000 to 100,000 gallons of oil to the coastal waters.

(c) *Major discharge* means a discharge of more than 10,000 gallons of oil to the inland waters or more than 100,000 gallons of oil to the coastal waters.

Size classes of releases refers to the following size classifications which are provided as guidance to the OSC for meeting pollution reporting requirements in Subpart C. The final determination of the appropriate classification of a release will be made by the OSC based on consideration of the particular release (e.g., size, location, impact, etc.).

(a) *Minor release* means a release of a quantity of hazardous substance(s), pollutant(s), or contaminant(s) that poses minimal threat to public health or welfare or the environment.

(b) *Medium release* means all releases not meeting the criteria for classification as a minor or major release.

(c) *Major release* means a release of any quantity of hazardous substance(s), pollutant(s), or contaminant(s) that poses a substantial threat to public health or welfare or the environment or results in significant public concern.

Source control remedial action means measures that are intended to contain the hazardous substances or pollutants or contaminants where they are located or eliminate potential contamination by transporting the hazardous substances or pollutants or contaminants to a new location. Source control remedial actions may be appropriate if a substantial concentration or amount of hazardous substances or pollutants or contaminants remains at or near the area where they are originally located and inadequate barriers exist to retard migration of hazardous substances or pollutants or contaminants into the environment. Source control remedial actions may not be appropriate if most hazardous substances or pollutants or contaminants have migrated from the area where originally located or if the lead agency determines that the hazardous substances or pollutants or contaminants are adequately contained.

Specified ports and harbors means those port and harbor areas on inland rivers, and land areas immediately adjacent to those waters, where the USCG acts as predesignated on-scene coordinator. Precise locations are determined by EPA/USCG regional agreements and identified in Federal regional contingency plans.

Trustee means any Federal natural resources management agency designated in Subpart G of this Plan, and any State agency which may pursue claims for damages under section 107(f) of CERCLA.

United States, when used in relation to section 311(a)(5) of the CWA, refers to the States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands. *United States*, when used in relation to section 101(27) of CERCLA, and *State* include the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Commonwealth of the Northern Marianas, and any other territory or possession over which the U.S. has jurisdiction.

Volunteer means any individual accepted to perform services by a Federal agency which has authority to accept volunteer services (examples: See 16 U.S.C. 742f(c)). A volunteer is subject to the provisions of the authorizing statute, and § 300.25.

Subpart B—Responsibility

SOURCE: 50 FR 47955, Nov. 20, 1985, unless otherwise noted.

§ 300.21 Duties of President delegated to Federal agencies.

In Executive Order 11735 and Executive Order 12316, the President delegated certain functions and responsibilities vested to him by the CWA and CERCLA, respectively. Responsibilities so delegated shall be responsibilities of Federal agencies under this Plan unless:

(a) Responsibility is redelegated pursuant to section 8(f) of Executive Order 12316; or

(b) Executive Order 11735 or Executive Order 12316 is amended or revoked.

§ 300.22 Coordination among and by Federal agencies.

(a) Federal agencies should coordinate their planning and response activities through the mechanisms described in Subpart C of this Plan and other means as may be appropriate.

(b) Federal agencies should coordinate planning and response action with affected State and local government and private entities.

(c) Federal agencies with facilities or other resources which may be useful in a Federal response situation should make those facilities or resources available consistent with agency capabilities and authorities.

(d) When the Administrator of EPA or the Secretary of the Department in which the Coast Guard is operating determines:

(1) That there is an imminent and substantial threat to the public health or welfare because of a discharge of oil from any offshore or onshore facility; or

(2) That there may be an imminent and substantial endangerment to the public health or welfare or the environment because of a release or threatened release of a hazardous substance from a facility; he/she may request the Attorney General to secure the relief necessary to abate the threat. The action described here is in addition to any actions taken by a

State or local government for the same purpose.

(e) In accordance with section 311(d) of the CWA, whenever a marine disaster in or upon the navigable waters of the United States has created a substantial threat of a pollution hazard to the public health or welfare because of a discharge or an imminent discharge from a vessel of large quantities of oil or hazardous substances designated pursuant to section 311(b)(2)(A) of the CWA, the United States may:

(1) Coordinate and direct all public and private efforts to abate the threat; and

(2) Summarily remove and, if necessary, destroy the vessel by whatever means are available without regard to any provisions of law governing the employment of personnel or the expenditure of appropriated funds. The authority for these actions has been delegated under Executive Order 11735 to the Administrator of EPA and the Secretary of the Department in which the Coast Guard is operating, respectively, for the waters for which each designates the OSC under this Plan.

(f) Response actions to remove discharges originating from the Outer Continental Shelf Lands Act operations shall be in accordance with this Plan.

(g) Where appropriate, discharges of radioactive materials shall be handled pursuant to the appropriate Federal radiological plan. For purposes of this Plan, the Federal Radiological Emergency Response Plan (49 FR 35896, September 12, 1984) is the appropriate response plan.

§ 300.23 Other assistance by Federal agencies.

(a) Each of the Federal agencies listed in paragraph (b) of this section has duties established by statute, executive order, or Presidential directive which may be relevant to Federal response action following or in prevention of a discharge of oil or a release of a hazardous substance, pollutant, or contaminant. These duties may also be relevant to the rehabilitation, restoration, and replacement of damaged or lost natural resources. Federal regional contingency plans should call upon agencies to carry out these duties in a coordinated manner.

(b) The following Federal agencies may be called upon by an OSC/RPM during the planning or implementation of a response to provide assistance in their respective areas of expertise as indicated below, consistent with agency capabilities and legal authorities:

(1) The Department of Agriculture (USDA) provides expertise in managing agricultural, forest, and wilderness areas. The Soil Conservation Service can provide to the OSC/RPM predictions of the effects of pollutants on soil and their movements over and through soil.

(2) The Department of Commerce (DOC), through NOAA, provides scientific expertise on living marine resources for which it is responsible and their habitats, including endangered species and marine mammals; coordinates scientific support for responses and contingency planning in coastal and marine areas, including assessments of the hazards that may be involved, predictions of movement and dispersion of discharged oil and released hazardous substances through trajectory modeling, and information on the sensitivity of coastal environments to oil discharges; and provides information on actual and predicted meteorological, hydrologic, ice, and oceanographic conditions for marine, coastal, and inland waters; and furnishes charts and maps, including tide and circulation information for coastal and territorial waters and for the Great Lakes.

(3) The Department of Defense (DOD), consistent with its operational requirements, may provide assistance to other Federal agencies on request. The United States Army Corps of Engineers has specialized equipment and personnel for maintaining navigation channels, for removing navigation obstructions, for accomplishing structural repairs, and for performing maintenance to hydropower electric generating equipment. The Corps can also provide design services, perform construction, and provide contract writing and contract administration services for other Federal agencies. The United

States Navy (USN), as a result of its mission and Pub. L. 80-513 (Salvage Act), is the Federal agency most knowledgeable and experienced in ship salvage, shipboard damage control, and diving. The USN has an extensive array of specialized equipment and personnel available for use in these areas as well as specialized containment, collection, and removal equipment specifically designed for salvage-related and open sea pollution incidents. Also, upon request of the OSC, locally deployed USN oil spill equipment may be provided. This equipment is available on a reimbursable basis to Federal agencies upon request when commercial equipment is not available. As described elsewhere in the Plan, DOD officials serve as OSCs for removal actions and as RPMs for remedial actions resulting from releases of hazardous substances, pollutants, or contaminants from DOD vessels and facilities.

(4) The Department of Energy (DOE) provides advice to the OSC/RPM when assistance is required in identifying the source and extent of radioactive releases, and in the removal and disposal of radioactive contamination.

(5) The Department of Health and Human Services (HHS) is responsible for providing assistance on all matters related to the assessment of health hazards at a response, and protection of both response workers' and the public's health.

(6) The Federal Emergency Management Agency (FEMA) will provide advice and assistance to the OSC/RPM on coordinating civil emergency planning and mitigation efforts with other Executive agencies, State and local governments, and the private sector. In the event of a major disaster declaration or emergency determination by the President at a hazardous materials response site, FEMA will coordinate all disaster or emergency actions with the OSC/RPM.

(7) The Department of the Interior (DOI) should be contacted through Regional Environmental Officers (REO), who are the designated members of RRTs. Department land managers have jurisdiction over the National Park System, National Wildlife Refuges and Fish Hatcheries, the public lands, and certain water projects in western States. In addition, bureaus and offices have relevant expertise as follows:

Fish and Wildlife Service: Fish and wildlife, including endangered and threatened species, migratory birds, certain marine mammals; habitats, resource contaminants; and laboratory research facilities.

Geological Survey: Geology, hydrology (ground water and surface), and natural hazards.

Bureau of Land Management: Minerals, soils, vegetation, wildlife, habitat, archaeology, wilderness; hazardous materials; etc.

Minerals Management Service: Manned facilities for Outer Continental Shelf (OCS) oversight.

Bureau of Mines: Analysis and identification of inorganic hazardous substances.

Office of Surface Mining: Coal mine wastes, land reclamation.

National Park Service: Biological and general natural resources expert personnel at Park units.

Bureau of Reclamation: Operation and maintenance of water projects in the West; engineering and hydrology; and reservoirs.

Bureau of Indian Affairs: Coordination of activities affecting Indian lands.

Office of Territorial Affairs: Assistance in implementing the NCP in American Samoa, Guam, the Trust Territory of the Pacific Islands, and the Virgin Islands.

(8) The Department of Justice (DOJ) can provide expert advice on complicated legal questions arising from discharge or releases and Federal agency responses. In addition, the DOJ represents the Federal government, including its agencies, in litigation.

(9) The Department of Labor (DOL), through the Occupational Safety and Health Administration (OSHA), will provide the OSC/RPM with advice, guidance, and assistance regarding hazards to persons involved in removal or control of oil discharges and hazardous substance releases, and in the precautions necessary to prevent hazards to their health and safety. OSHA and the States operating OSHA-approved State plans have the responsibility for assuring employee safety and health at response activities under this Plan. In cooperation with EPA and the NRT, OSHA has established a policy for handling occupational safety and health problems which may

arise. This policy specifies that on request, OSHA will provide technical assistance to EPA, any other lead agency, or the contractor. Technical assistance may include review of site safety plans, review of site work practices, assistance with exposure monitoring, and help with other questions that arise about compliance with OSHA standards. OSHA is also ready to respond to inspection requests from EPA or another lead agency, and will act if there are accidents or employee complaints about unsafe or unhealthful work conditions at response activities under this Plan, as it does in other industries. OSHA reserves the right to take other actions necessary to assure that employees are properly protected at such response activities. Any questions about occupational safety and health at response sites should be referred to the OSHA Regional Office.

(10) The Department of Transportation (DOT) provides expertise on all modes of transporting oil and hazardous substances. Through the USCG, DOT offers expertise in domestic/international fields of port safety and security, maritime law enforcement, ship navigation and construction, and the manning, operation, and safety of vessels and marine facilities. The USCG also maintains continuously manned facilities which can be used for command, control, and surveillance of oil discharges and hazardous substance releases occurring in the coastal zone. The USCG provides predesignated OSCs for the coastal zone. Through the Research and Special Programs Administration (RSPA), DOT offers expertise in the requirements for packaging, handling, and transporting regulated hazardous materials.

(11) The Department of State (DOS) will lead in the development of joint international contingency plans. It will also help to coordinate an international response when discharges or releases cross international boundaries or involve foreign flag vessels. Additionally, this Department will coordinate requests for assistance from foreign governments and U.S. proposals for conducting research at incidents that occur in waters of other countries.

(12) The Environmental Protection Agency (EPA) provides expertise on environmental effects of oil discharges or releases of hazardous substances, pollutants, or contaminants and environmental pollution control techniques. EPA provides predesignated OSCs for the inland zone and RPMs for all remedial actions, unless otherwise agreed. EPA also will generally provide the SSC for responses in inland areas. EPA may enter into a contract or cooperative agreement with the appropriate State in order to implement a response action.

(c) In addition to their general responsibilities under paragraph (a) of this section, Federal agencies should:

(1) Make necessary information available to the NRT, RRTs, and OSCs/RPMs.

(2) Inform the NRT and RRTs (consistent with national security considerations) of changes in the availability of resources that would affect the operations of the Plan.

(3) Provide representatives, as necessary, to the NRT and RRTs and assist RRTs and OSCs in formulating Federal regional and Federal local contingency plans.

(d) All Federal agencies are responsible for reporting releases of hazardous substances and discharges of oil from facilities or vessels which are under their jurisdiction or control in accordance with sections 104(a) and (b) and 101(24) of CERCLA, subject to the following:

(1) HHS is delegated all authorities under section 104(b) of CERCLA relating to a determination that illness, disease, or complaints thereof may be attributable to exposure to a hazardous substance, pollutant, or contaminant. (In addition, section 104(i) of CERCLA calls upon HHS to: Establish appropriate disease/exposure registries; conduct appropriate testing for exposed individuals; develop, maintain, and provide information on health effects of toxic substances; and maintain a list of areas restricted or closed because of toxic substance contamination.)

(2) FEMA is delegated the authorities vested in the President by section 104(a) of CERCLA to the extent they require permanent relocation of residents, businesses, and community fa-

cilities or temporary evacuation and housing of threatened individuals not otherwise provided for. Authority under section 101(24) of CERCLA to the extent that a determination by the President that "permanent relocation of residents and businesses and community facilities" is included within the terms "remedy" and "remedial action" as defined in section 101(24) of CERCLA, has been redelegated to the Environmental Protection Agency.

(3) DOD is delegated all authority of sections 104(a) and (b) of CERCLA with respect to releases from DOD facilities or vessels, including vessels owned or bareboat chartered and operated.

(e) If the situation is beyond the capability of State and local governments and the statutory authority of Federal agencies, the President may, under the Disaster Relief Act of 1974, act upon a request by the governor and declare a major disaster or emergency and appoint a Federal Coordinating Officer (FCO) to coordinate all Federal disaster assistance activities. In such cases, the OSC/RPM would continue to carry out his/her responsibilities under the NCP, but would coordinate his/her activities with the FCO to ensure consistency with other Federal disaster assistance activities.

§ 300.24 State and local participation.

(a) Each State governor is requested to assign an office or agency to represent the State on the appropriate RRT. Local governments are invited to participate in activities on the appropriate RRT as may be provided by State law or arranged by the State's representative. The State's representative may participate fully in all facets of activities of the appropriate RRT and is encouraged to designate the element of the State government that will direct State supervised response operations.

(b) State and local government agencies are encouraged to include contingency planning for responses, consistent with this Plan and Regional Contingency Plans, in all emergency and disaster planning.

(c) States are encouraged to use State authorities to compel potentially responsible parties to undertake response actions, or to themselves undertake response actions which are not eligible for Federal funding.

(d) States may enter into contracts or cooperative agreements pursuant to section 104(c)(3) and (d) of CERCLA or section 311(c)(2)(H) of the CWA, as appropriate, to undertake actions authorized under Subparts E and F of this Plan. Requirements for entering into these agreements are included in § 300.58 and § 300.62 of this Plan. A State agency that acts pursuant to such agreements is referred to as lead agency. While the terms "On-Scene Coordinator," "OSC," "Remedial Project Manager," and "RPM" are reserved for Federal officials for the purposes of this Plan, a State agency may choose to use these titles for its response personnel without such use connoting the definitions, responsibilities, and authorities for these titles for Federal officials under this Plan. In the case of a State as lead agency, the State shall carry out the same responsibilities delineated for OSCs/RPMs in this Plan (except coordinating and directing Federal agency response actions).

(e) Since State and local public safety organizations would normally be the first government representatives at the scene of a discharge or release, they would be expected to initiate public safety measures necessary to protect public health and welfare, and are responsible for directing evacuations pursuant to existing State/local procedures.

§ 300.25 Nongovernment participation.

(a) Industry groups, academic organizations, and others are encouraged to commit resources for response operations. Specific commitments should be listed in Federal regional and Federal local contingency plans.

(b) It is particularly important to use the valuable technical and scientific information generated by the non-government local community along with those from Federal and State governments to assist the OSC/RPM in devising cleanup strategies where effective standard techniques are unavailable, and to ensure that pertinent research will be undertaken to meet national needs. The scientific support coordinator (SSC) shall act as liaison between the OSC/RPM and such interested organizations.

(c) Federal local contingency plans shall establish procedures to allow for well-organized, worthwhile, and safe use of volunteers. Local plans should provide for the direction of volunteers by the OSC or by other Federal, State, or local officials knowledgeable in contingency operations and capable of providing leadership. Local plans also should identify specific areas in which volunteers can be used, such as beach surveillance, logistical support, and bird and wildlife treatment. Unless specifically requested by the OSC, volunteers generally should not be used for physical removal or remedial activities. If, in the judgment of the OSC or an appropriate participating agency, dangerous conditions exist, volunteers shall be restricted from on-scene operations.

(d)(1) If any person other than the Federal government or a State or person operating under contract or cooperative agreement with the United States takes response action and intends to seek reimbursement from the Fund, such actions, to be in conformity with this Plan for purposes of section 111(a)(2) of CERCLA, may only be reimbursed if such person notifies the Administrator of EPA or his/her designee prior to taking such action and receives prior approval to take such action.

(2) The process of prior approval of Fund reimbursement requests is preauthorization. Fund preauthorization will be considered only for:

(i) Releases warranting a response action pursuant to § 300.65 or 300.68;

((ii) CERCLA section 104(b) activities; and

(iii) Remedial actions at National Priorities List sites.

(3) All requests for preauthorization will be reviewed to determine whether the request should receive priority for funding.

(4) Preauthorization does not obligate the Fund. For purposes of payment of a claim under CERCLA section 112, the responsible Federal official must certify that costs incurred were necessary and consistent with the Fund preauthorization.

(5) All persons requesting preauthorization must demonstrate the technical and other capabilities to respond safely and effectively to releases of hazardous substances, or pollutants or contaminants.

Subpart C—Organization

Source: 50 FR 47958, Nov. 20, 1985, unless otherwise noted.

§ 300.31 Organizational concepts.

Three fundamental kinds of activities are performed pursuant to the Plan: Planning and coordination, operations at the scene of a discharge and/or release, and communications. The organizational elements created to perform these activities are discussed below in the context of their roles in these activities. The organizational concepts of this Plan are depicted in Figure 1. The standard Federal Regional boundaries are shown in Figure 2, and the U.S. Coast Guard District boundaries are shown in Figure 3.

Figure 1

NATIONAL CONTINGENCY PLAN CONCEPTS

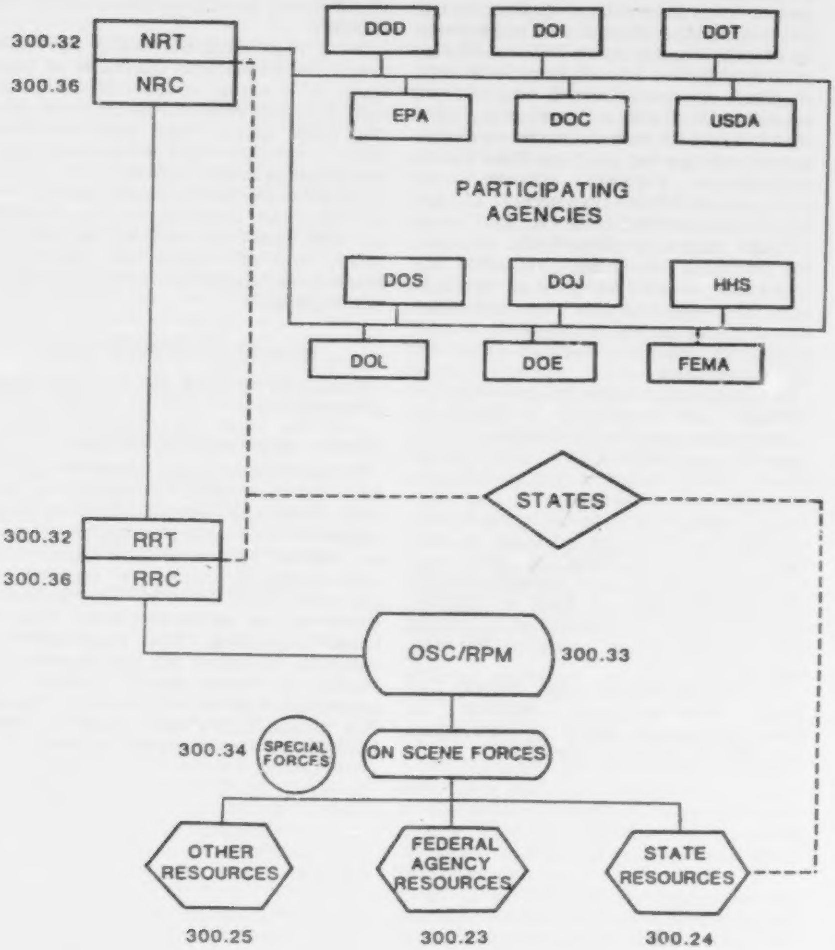

300.32
NRT
300.36
NRC
DOD
DOI
DOT
EPA
DOC
USDA
PARTICIPATING AGENCIES
DOS
DOJ
HHS
DOL
DOE
FEMA
STATES
300.32
RRT
300.36
RRC
OSC/RPM
300.33
300.34
SPECIAL FORCES
ON SCENE FORCES
OTHER RESOURCES
FEDERAL AGENCY RESOURCES
STATE RESOURCES
300.25
300.23
300.24

Figure 2

STANDARD REGIONAL BOUNDARIES
TEN REGIONS

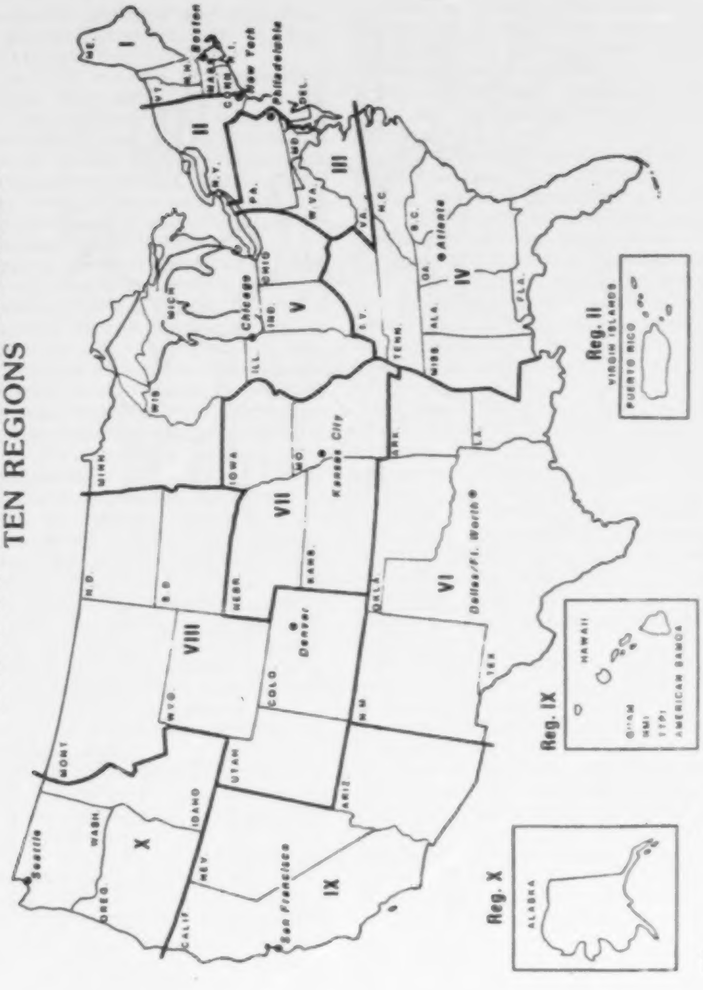
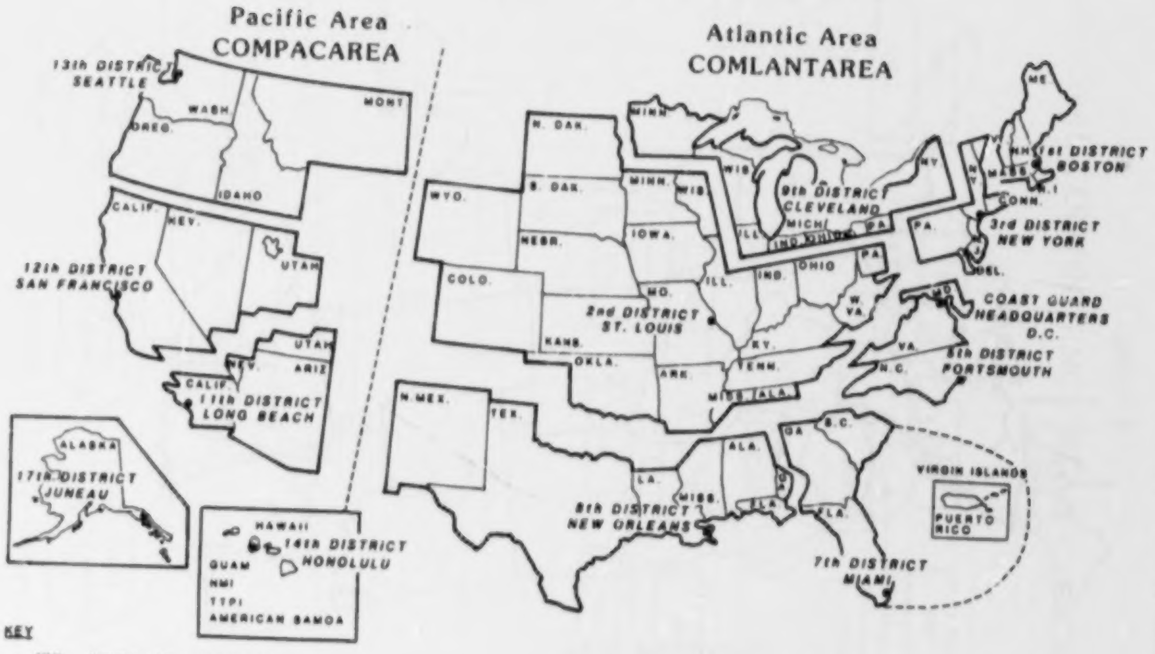

I
II
III
IV
V
VI
VII
VIII
IX
X
Boston
New York
Philadelphia
Atlanta
Chicago
Kansas City
Dallas/Ft. Worth
Denver
San Francisco
Seattle
ME.
VT.
N.H.
MASS.
CONN.
R.I.
N.Y.
PA.
N.J.
DEL.
MD.
W.VA.
VA.
N.C.
S.C.
GA.
FLA.
ALA.
MISS.
TENN.
KY.
OHIO
IND.
ILL.
MICH.
WIS.
MINN.
IOWA
MO.
ARK.
LA.
TEX.
OKLA.
KANS.
NEBR.
S.D.
N.D.
MONT.
WYO.
COLO.
N.M.
UTAH
ARIZ.
NEV.
CALIF.
IDAHO
WASH.
OREG.
Reg. X
ALASKA
Reg. IX
HAWAII
GUAM
NMI
TTPI
AMERICAN SAMOA
Reg. II
VIRGIN ISLANDS
PUERTO RICO
KEY
NMI Northern Mariana Islands
TTPI Trust Territory of the Pacific Islands

Figure 3

U.S. COAST GUARD DISTRICTS


Pacific Area
COMPACAREA
Atlantic Area
COMLANTAREA
13th DISTRICT
SEATTLE
WASH.
OREG.
MONT.
IDAHO
CALIF.
NEV.
UTAH
12th DISTRICT
SAN FRANCISCO
UTAH
NEV.
ARIZ.
CALIF.
11th DISTRICT
LONG BEACH
ALASKA
17th DISTRICT
JUNEAU
HAWAII
14th DISTRICT
HONOLULU
GUAM
NMI
TTPI
AMERICAN SAMOA
N. DAK.
S. DAK.
WYO.
NEBR.
COLO.
KANS.
OKLA.
N. MEX.
TEX.
MINN.
MINN.
WIS.
IOWA
MO.
2nd DISTRICT
ST. LOUIS
ARK.
LA.
8th DISTRICT
NEW ORLEANS
MISS.
ALA.
FLA.
ILL.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
W. VA.
PA.
WIS.
MICH.
ILL.
IND.
OHIO
PA.
9th DISTRICT
CLEVELAND
NY
ME
NH
VT
MASS.
R.I.
CONN.
1st DISTRICT
BOSTON
PA.
NY
3rd DISTRICT
NEW YORK
DEL.
MD.
COAST GUARD
HEADQUARTERS
D.C.
VA.
N.C.
5th DISTRICT
PORTSMOUTH
S.C.
GA.
GA.
FLA.
7th DISTRICT
MIAMI
VIRGIN ISLANDS
PUERTO RICO

KEY

NMI: Northern Mariana Islands

TTPI: Trust Territory of the Pacific Islands

§ 300.32 Planning and coordination.

(a) National planning and coordination is accomplished through the National Response Team (NRT).

(1) The NRT consists of representatives from the agencies named in § 300.23. Each agency shall designate a member to the team and sufficient alternates to ensure representation, as agency resources permit. Other agencies may request membership on the NRT by forwarding such requests to the chairman of the NRT.

(2) Except for periods of activation because of a response action, the representative of EPA shall be the chairman and the representative of USCG shall be the vice chairman of the NRT. The vice chairman shall maintain records of NRT activities along with national, regional, and local plans for response actions. When the NRT is activated for response actions, the chairman shall be the EPA or USCG representative, based on whether the discharge or release occurs in the inland zone or coastal zone, unless otherwise agreed upon by the chairman and vice chairman.

(3) While the NRT desires to achieve a consensus on all matters brought before it, certain matters may prove unresolvable by this means. In such cases, each department or agency serving as a participating agency on the NRT may be accorded one vote in NRT proceedings.

(4) The NRT may establish such bylaws and committees as it deems appropriate to further the purposes for which it is established.

(5) When the NRT is not activated for a response action, it shall serve as a standing committee to evaluate methods of responding to discharges or releases, to recommend needed changes in the response organization, and to recommend revisions to this Plan.

(6) The NRT may consider and make recommendations to appropriate agencies on the training, equipping, and protection of response teams and necessary research, development, demonstration, and evaluation to improve response capabilities.

(7) Direct planning and preparedness responsibilities of the NRT include:

(i) Maintaining national readiness to respond to a major discharge of oil or release of a hazardous substance or pollutant or contaminant which is beyond regional capabilities;

(ii) Monitoring incoming reports from all RRTs and activating when necessary;

(iii) Reviewing regional responses to oil discharges and hazardous substance releases, including an evaluation of equipment readiness and coordination among responsible public agencies and private organizations;

(iv) Developing procedures to ensure the coordination of Federal, State, and local governments and private response to oil discharges and releases of hazardous substances, pollutants, or contaminants;

(v) Monitoring response-related research and development, testing, and evaluation activities of NRT agencies to enhance coordination and avoid duplication of effort; and

(vi) Monitoring response training to encourage coordination of available resources between agencies with responsibilities under this Plan.

(8) The NRT may consider matters referred to it for advice or resolution by an RRT.

(b) The RRT provides the appropriate regional mechanism for planning and preparedness activities before a response action is taken and for coordination and advice during such response actions. The two principal components of the RRT mechanism are a standing team, which consists of designated representatives from each participating Federal agency, State governments, and local governments (as agreed upon by the States), and incident-specific teams where participation will relate to the technical nature of the incident and its geographic location. The standing team jurisdiction will correspond with the standard Federal Regions, except for Alaska and the Caribbean area which will also have standing RRTs. The role of the standing RRT will include communications, planning, coordination, training, evaluation, preparedness, and other such matters on a Region-wide basis. The incident-specific team jurisdiction will relate to the operational requirements of discharge or release response.

Appropriate levels of activation, including participation by State and local governments, shall be determined by the designated RRT chairman for the incident.

(1) Except when the RRT is activated for a removal incident, the representatives of EPA and USCG shall act as co-chairmen. When the RRT is activated for response actions, the chairman shall be the EPA or USCG representative, based on whether the discharge or release occurs in the inland zone or coastal zone, unless otherwise agreed upon by the co-chairmen.

(2) Each participating agency should designate one member and at least one alternate member to the RRT. Agencies whose regional subdivisions do not correspond to the standard Federal Regions may designate additional representatives to the standing RRT to ensure appropriate coverage of the standard Federal Region. Participating States may also designate one member and at least one alternate member to the Team. All agencies and States may also provide additional representatives as observers to meetings of the RRT.

(3) RRT members should designate representatives from their agencies to work with OSCs in developing Federal local contingency plans, providing for the use of agency resources, and in responding to discharges and releases [see § 300.43].

(4) Federal regional and Federal local plans should adequately provide the OSC with assistance from the Federal agencies commensurate with agencies' resources, capabilities, and responsibilities within the region. During a response action, the members of the RRT should seek to make available the resources of their agencies to the OSC as specified in the Federal regional and Federal local contingency plans.

(5) Affected States are encouraged to participate actively in all RRT activities [see § 300.24(a)], to designate representatives to work with the RRT and OSCs in developing Federal regional and Federal local plans, to plan for and make available State resources, and to serve as the contact point for coordination of response with local government agencies whether or not represented on the RRT.

(6) The standing RRT will serve to recommend changes in the regional response organization as needed, to revise the regional plan as needed, and to evaluate the preparedness of the agencies and the effectiveness of local plans for the Federal response to discharges and releases. The RRT should:

(i) Conduct advance planning for use of dispersants, surface collection agents, burning agents, biological additives, or other chemical agents in accordance with § 300.84(e) of this Plan.

(ii) Make continuing review of regional and local responses to discharges or releases, considering available legal remedies, equipment readiness, and coordination among responsible public agencies and private organizations.

(iii) Based on observations of response operations, recommend revisions of the National Contingency Plan to the NRT.

(iv) Consider and recommend necessary changes based on continuing review of response actions in the region.

(v) Review OSC actions to help ensure that Federal regional and Federal local contingency plans are developed satisfactorily.

(vi) Be prepared to respond to major discharges or releases outside the region.

(vii) Meet at least semiannually to review response actions carried out during the preceding period, and consider changes in Federal regional and Federal local contingency plans.

(viii) Provide letter reports on their activities to the NRT twice a year, no later than January 31 and July 31. At a minimum, reports should summarize recent activities, organizational changes, operational concerns, and efforts to improve State and local coordination.

(ix) Encourage the State and local response community to improve their preparedness for response.

(x) Conduct training exercises as necessary to encourage preparedness activities of the response community within the region.

(7) Whenever there is insufficient national policy guidance on a matter before the RRT, a technical matter requiring solution, a question concerning interpretation of the Plan, or there is a disagreement on discretionary actions between RRT members that cannot be resolved at the regional level, it may be referred to the NRT for advice or resolution.

(c) The OSC is responsible for developing any Federal local contingency plans for the Federal response in the area of the OSC's responsibility. This may be accomplished in cooperation with the RRT and designated State and local representatives [see § 300.43]. Boundaries for Federal local contingency plans shall coincide with those agreed upon between EPA, DOD, and the USCG (subject to Executive Order 12316) to determine OSC areas of responsibility and should be clearly indicated in the regional contingency plan. Where practicable, consideration should be given to jurisdictional boundaries established by State and local plans.

(1) The lead agency should provide appropriate training for its OSCs, RPMs, and other response personnel to carry out their responsibilities under this Plan.

(2) To the extent practicable, OSCs/RPMs should ensure that persons designated to act as their on-scene representatives are adequately trained and prepared to carry out actions under this Plan.

§ 300.33 Response operations.

(a) EPA and USCG shall designate OSCs/RPMs for all areas in each region, provided, however, that DOD shall designate OSCs/RPMs responsible for taking all actions resulting from releases of hazardous substances, pollutants, or contaminants from DOD facilities and vessels. DOD will be the removal response authority with respect to incidents involving DOD military weapons and munitions. Removal actions involving nuclear weapons should be conducted in accordance with the joint Department of Defense, Department of Energy, and Federal Emergency Management Agency Agreement for Response to Nuclear Incidents and Nuclear Weapons Significant Incidents of January 8, 1981. The USCG will furnish or provide OSCs for oil discharges and for the immediate removal of hazardous substances, pollutants, or contaminants into or threatening the coastal zone except that the USCG will not provide predesignated OSCs for discharges and releases from hazardous waste management facilities or in similarly chronic incidents. EPA shall furnish or provide OSCs for discharges and releases into or threatening the inland zone and shall furnish or provide RPMs for Federally funded remedial actions except as otherwise agreed. The USCG will provide an initial response to hazardous waste management facilities within the coastal zone in accordance with the DOT/EPA Instrument of Redelegation (46 FR 63294). EPA will also assume all remedial actions resulting from removals initiated by the USCG in the coastal zone except those involving vessels. The USCG OSC shall contact the cognizant EPA RPM as soon as it is evident that a removal may require a follow-up remedial action to ensure that the required planning can be initiated and an orderly transition to EPA lead can occur.

(b) The OSC/RPM directs Federal Fund-financed response efforts and coordinates all other Federal efforts at the scene of a discharge or release, subject to Exective Order 12316. As part of the planning and preparation for response, the OSCs/RPMs shall be predesignated by the regional or district head of the lead agency.

(1) The first Federal official to arrive at the scene of a discharge or release should coordinate activities under this Plan and is authorized to initiate, in consultation with the OSC, any necessary actions normally carried out by the OSC until the arrival of the predesignated OSC. This official may initiate Federal Fund-financed actions only as authorized by the OSC or (if the OSC is unavailable) the authorized representative of the lead agency.

(2) The OSC/RPM shall, to the extent practicable under the circumstances, collect pertinent facts about the discharge or release, such as its source and cause; the identification of potentially responsible parties; the

nature, amount, and location of discharged or released materials; the probable direction and time of travel of discharged or released materials; the pathways to human and environmental exposure; potential impact on human health, welfare, and safety and the environment; the potential impact on natural resources and property which may be affected; priorities for protecting human health, welfare, and the environment; and appropriate cost documentation.

(3) The OSC/RPM shall direct response operations (see Subparts E and F for descriptive details). The OSC's/RPM's effort shall be coordinated with other appropriate Federal, State, local, and private response agencies. OSCs/RPMs may designate capable persons from Federal, State, or local agencies to act as their on-scene representative. State and local representatives, however, are not authorized to take actions under Subparts E and F that involve expenditures of CWA section 311(k) or CERCLA funds unless an appropriate contract or cooperative agreement has been established.

(4) The OSC (and when the RRT has been activated for a remedial action, the RPM) should consult regularly with the RRT in carrying out this Plan and will keep the RRT informed of activities under this Plan.

(5) The OSC/RPM shall advise the appropriate State agency (as agreed upon with each State) as promptly as possible of reported discharges and releases.

(6) The OSC/RPM shall evaluate incoming information and immediately advise FEMA of potential major disaster situations. In the event of a major disaster or emergency, under the Disaster Relief Act of 1974 (Pub. L. 93-288), the OSC/RPM will coordinate any response activities with the Federal Coordinating Officer designated by the President. In addition, the OSC/RPM should notify FEMA of situations potentially requiring evacuation, temporary housing, and permanent relocation.

(7) In those instances where a possible public health emergency exists, the OSC/RPM should notify the HHS representative to the RRT. Throughout response actions, the OSC/RPM may call upon the HHS representative for assistance in determining public health threats and for advice on worker health and safety problems.

(8) All Federal agencies should plan for emergencies and develop procedures for dealing with oil discharges and releases of hazardous substances, pollutants, or contaminants from vessels and facilities under their jurisdiction. All Federal agencies, therefore, are responsible for designating the office that coordinates response to such incidents in accordance with this Plan and applicable Federal regulations and guidelines. The OSC/RPM should provide advice and assistance as requested by Federal agencies for incidents involving vessels or facilities under their jurisdiction. At the request of the Federal agency, or if, in the opinion of the OSC (or in a remedial action, the lead agency), the responsible Federal agency does not act promptly or take appropriate action to respond to a discharge or release occurring on a vessel or facility, including contiguous lands under its jurisdiction, the OSC (or in a remedial action, the lead agency) designated to respond in the area where the discharge or release occurs may conduct appropriate response activities. If this occurs, the OSC (or in a remedial action, the lead agency) shall consult with and coordinate all response activities taken with the responsible Federal agency. With respect to release of hazardous substances, pollutants, or contaminants from DOD facilities or vessels, DOD designates the OSC/RPM.

(9) The OSC/RPM should notify the affected land managing agency and trustees of natural resources, as promptly as possible, of releases and discharges affecting Federal resources under their jurisdiction. The OSC or RPM should consult with and coordinate all response activities with the affected land managing agency or resource trustee to the extent practicable.

(10) Where the OSC/RPM becomes aware that a discharge or release may adversely affect any endangered or threatened species, or result in destruction or adverse modification of the habitat of such species, the OSC/

RPM should consult with the DOI or DOC (NOAA).

(11) The OSC/RPM is responsible for addressing worker health and safety concerns at a response scene, in accordance with § 300.38 of this Plan.

(12) The OSC shall submit pollutant reports (POLREPs) to the RRT and appropriate agencies as significant developments occur during removal actions.

(13) OSCs/RPMs should ensure that all appropriate public and private interests are kept informed and that their concerns are considered throughout a response in accordance with § 300.39 to the extent practicable.

(14) The RPM is the prime contact for remedial actions being taken (or needed to be taken) at sites on the proposed or promulgated National Priorities List (NPL). These actions include:

(i) *Fund-Financed Cleanup/Federal Lead*—The RPM coordinates, directs, and reviews the work of all EPA, State, and local governments, the U.S. Army Corps of Engineers, and all other agencies and contractors to assure compliance with this Plan. Based upon the reports of these parties, the RPM recommends action for decisions by lead agency officials. The RPM's period of responsibility begins prior to initiation of the Remedial Investigation/Feasibility Study (RI/FS) [described in § 300.68(d)] and continues through design, construction, deletion of the site from the NPL, and in some cases, the CERCLA cost recovery activity. The RPM should coordinate with the OSC to ensure an orderly transition from OSC response activities to remedial activities.

(ii) *Fund-Financed Cleanup/State Lead*—The RPM serves in an oversight capacity during the planning, design, and cleanup activities of a State-lead remedial action, offering both technical and programmatic guidance.

(iii) The RPM shall participate in all decisionmaking processes necessary to ensure compliance with this Plan and the cooperative agreement between EPA and the State. The RPM will also review responses implemented pursuant to preauthorization in order for EPA to determine that the responses are consistent with preauthorization in cases where claims are filed for reimbursement.

§ 300.34 Special forces and teams.

(a) The National Strike Force (NSF) consists of the Strike Teams established by the USCG on the Atlantic, Pacific, and Gulf coasts and a Dive Team located on the Atlantic coast, with resources available to provide assistance to the OSC/RPM.

(1) The Strike Teams can provide communication support, advice, and assistance for oil and hazardous substances removal. These teams also have knowledge of shipboard damage control, are equipped with specialized containment and removal equipment, and have rapid transportation available. The NSF Dive Team has knowledge and capability in diving, damage assessment, and underwater surveys. It also maintains limited capability for evaluating, planning, and carrying out diving in chemical-contaminated waters. When possible, the Strike Teams will provide training for emergency task forces and assist in the development of regional and local contingency plans.

(2) The OSC/RPM may request assistance from the Strike Teams. Requests for a team may be made directly to the Commanding Officer of the appropriate team, the USCG member of the RRT, the appropriate USCG Area Commander, or the Commandant of the USCG through the NRC.

(b) Each USCG OSC manages emergency task forces trained to evaluate, monitor, and supervise pollution responses. Additionally, they have limited "initial aid" response capability to deploy equipment prior to the arrival of a cleanup contractor or other response personnel.

(c)(1) The Environmental Response Team (ERT) is established by EPA in accordance with its disaster and emergency responsibilities. The ERT includes expertise in biology, chemistry, hydrology, geology, and engineering.

(2) It can provide access to special decontamination equipment for chemical releases and advice to the OSC/RPM in hazard evaluation; risk assessment; multimedia sampling and analysis program; on-site safety, including

development and implementation plans; cleanup techniques and priorities; water supply decontamination and protection; application of dispersants; environmental assessment; degree of cleanup required; and disposal of contaminated material.

(3) The ERT also provides both introductory and intermediate level training courses to prepare response personnel.

(4) OSC/RPM or RRT requests for ERT support should be made to the EPA representative on the RRT; the EPA Headquarters, Director, Office of Emergency and Remedial Response; or the appropriate EPA regional emergency coordinator.

(d) Scientific Support Coordinators (SSCs) are available, at the request of OSCs/RPMs, to assist with actual or potential responses to discharges of oil or releases of hazardous substances, pollutants, or contaminants. The SSC will also provide scientific support for the development of regional and local contingency plans. Generally, SSCs are provided by NOAA in coastal and marine areas, and by EPA in inland regions.

(1) During a response, the SSC serves under the direction of the OSC/RPM and is responsible for providing scientific support for operational decisions and for coordinating on-scene scientific activity. Depending on the nature of the incident, the SSC can be expected to provide certain specialized scientific skills and to work with governmental agencies, universities, community representatives, and industry to compile information that would assist the OSC/RPM in assessing the hazards and potential effects of discharges and releases and in developing response strategies.

(2) If requested by the OSC/RPM, the SSC will serve as the principal liaison for scientific information and will facilitate communications to and from the scientific community on response issues. The SSC, in this role, will attempt to reach a consensus on scientific issues surrounding the response but will also ensure that any differing opinions within the community are communicated to the OSC/RPM.

(3) The SSC will assist the OSC/RPM in responding to requests for assistance from the State and Federal agencies regarding scientific studies and environmental assessments. Details on access to scientific support shall be included in regional contingency plans.

(e) The USCG Public Information Assist Team (PIAT) and the EPA Public Affairs Assist Team (PAAT) are available to assist OSCs/RPMs and regional or district offices to meet the demands for public information and participation. Their use is encouraged any time the OSC/RPM requires outside public affairs support. Requests for these teams may be made through the NRC.

(f)(1) The RRT may be activated by the chairman as an incident-specific response team when a discharge or release:

(i) Exceeds the response capability available to the OSC in the place where it occurs;

(ii) Transects regional boundaries; or

(iii) May pose a substantial threat to the public health, welfare, or the environment, or to regionally significant amounts of property. Regional contingency plans shall specify detailed criteria for activation of RRTs.

(2) The RRT may be activated during any pollution emergency by a request from the OSC/RPM, or from any RRT representative, to the chairman of the Team. Requests for RRT activation shall later be confirmed in writing. Each representative, or an appropriate alternate, should be notified immediately when the RRT is activated.

(3) During prolonged removal or remedial action, the RRT may not need to be activated or may need to be activated only in a limited sense, or have available only those members of the RRT who are directly affected or who can provide direct response assistance.

(4) When the RRT is activated for a discharge or release, agency representatives shall meet at the call of the chairman and may:

(i) Monitor and evaluate reports from the OSC/RPM. The RRT may advise the OSC/RPM on the duration and extent of Federal response and may recommend to the OSC/RPM specific actions to respond to the discharge or release;

(ii) Request other Federal, State, or local governments, or private agencies to provide resources under their existing authorities to respond to a discharge or release or to monitor response operations;

(iii) Help the OSC/RPM prepare information releases for the public and for communication with the NRT;

(iv) If the circumstances warrant, make recommendations to the regional or district head of the agency providing the OSC/RPM that a different OSC/RPM should be designated; and

(v) Submit Pollution Reports (POLREPS) to the NRC as significant developments occur.

(5) When the RRT is activated, affected States may participate in all RRT deliberations. State government representatives participating in the RRT have the same status as any Federal member of the RRT.

(6) The RRT can be deactivated when the incident-specific RRT chairman determines that the OSC/RPM no longer requires RRT assistance.

(g) The NRT should be activated as an emergency response team:

(1) When an oil discharge or hazardous substance release:

(A) Exceeds the response capability of the regions in which it occurs;

(B) Transects regional boundaries; or

(C) Involves significant population threat or national policy issues, substantial amounts of property, or substantial threats to natural resources; or

(2) If requested by any NRT member.

(h) When activated for a response action, the NRT shall meet at the call of the chairman and may:

(1) Monitor and evaluate reports from the OSC/RPM. The NRT may recommend to the OSC/RPM, through the RRT, actions to combat the discharge or release;

(2) Request other Federal, State, and local governments, or private agencies, to provide resources under their existing authorities to combat a discharge or release or to monitor response operations; and

(3) Coordinate the supply of equipment, personnel, or technical advice to the affected region from other regions or districts.

§ 300.35 Multi-regional responses.

(a) If a discharge or release moves from the area covered by one Federal local or Federal regional contingency plan into another area, the authority for removal or response actions should likewise shift. If a discharge or release or substantial threat of discharge or release affects areas covered by two or more regional plans, the response mechanisms of both may be activated. In this case, removal or response actions of all regions concerned shall be fully coordinated as detailed in the regional plans.

(b) There shall be only one OSC/RPM at any time during the course of a response operation. Should a discharge or release affect two or more areas, the EPA, DOD, and USCG, as appropriate, shall give prime consideration to the area vulnerable to the greatest threat. The RRT shall designate the OSC/RPM if EPA, DOD, and USCG members are unable to agree on the designation. The NRT shall designate the OSC/RPM if members of one RRT or two adjacent RRTs are unable to agree on the designation.

(c) Where the USCG has provided the OSC for emergency response to a release from hazardous waste management facilities located in the coastal zone, responsibility for response action shall shift to EPA, in accordance with EPA/USCG agreements.

§ 300.36 Communications.

(a) The NRC is the national communications center for activities related to response actions. It is located at USCG Headquarters in Washington, D.C. The NRC receives and relays notices of discharges or releases to the appropriate OSC, disseminates OSC/RPM and RRT reports to the NRT when appropriate, and provides facilities for the NRT to use in coordinating a national response action when required.

(b) The Commandant, USCG, will provide the necessary personnel, communications, plotting facilities, and equipment for the NRC.

(c) Notice of an oil discharge or release of a hazardous substance in an amount equal to or greater than the reportable quantity must be made immediately in accordance with 33 CFR Part 153, Subpart B and 40 CFR Part 302, respectively. Notification shall be made to the NRC Duty Officer, HQ USCG, Washington, D.C., telephone (800) 424-8802 (or current local telephone number). All notices of discharges or releases received at the NRC shall be relayed immediately by telephone to the OSC or lead agency.

(d) The RRC provides facilities and personnel for communications, information storage, and other requirements for coordinating response. Each regional plan will specify the location of the RRC.

§ 300.37 Special considerations.

(a) *Response equipment*. The Spill Cleanup Inventory (SKIM) system is available to help OSCs and RRTs and private parties gain rapid information as to the location of response and support equipment. This inventory is accessible through the NRC and USCG's OSCs. The inventory includes private and commercial equipment, as well as government resources. The RRTs and OSCs shall ensure that data in the system are current and accurate. The USCG is responsible for maintaining and updating the system with RRT and OSC input.

(b) *Marine salvage*. (1) Marine salvage operations generally fall into five categories: Afloat salvage; offshore salvage; river and harbor clearance; cargo salvage; and rescue towing. Each category requires different knowledge and specialized types of equipment. The complexity of such operations may be further compounded by local environmental and geographic conditions.

(2) The nature of marine salvage and the conditions under which it occurs combine to make such operations imprecise, difficult, hazardous, and expensive. Thus, responsible parties or other persons attempting to perform such operations without adequate knowledge, equipment, and experience could aggravate, rather than relieve, the situation. OSCs with responsibility for monitoring, evaluating, or supervising these activities should request technical assistance from DOD, the Strike Teams, or commercial salvors as necessary to ensure that proper actions are taken.

§ 300.38 Worker health and safety.

(a) Requirements under the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.) (OSH Act) and under the laws of States with plans approved under section 18 of the OSH Act (State OSH laws), as well as other applicable safety and health requirements, will be applied to response activities under this Plan. These requirements are subject to enforcement by the appropriate Federal and State agencies. Federal OSHA requirements include, among other things, all OSHA General Industry (29 CFR Part 1910), Construction (29 CFR Part 1926), Shipyard (29 CFR Part 1915), and Longshoring (29 CFR Part 1918), standards wherever they are relevant, as well as OSHA recordkeeping and reporting regulations. Employers at response actions under this Plan will also be subject to the general duty requirement of section 5(a)(1) of the OSH Act (29 U.S.C. 654(a)(1)). No action by the lead agency with respect to response activities under this Plan constitutes an exercise of statutory authority within the meaning of section 4(b)(1) of the OSH Act. All governmental agencies and private employers are directly responsible for the health and safety of their own employees.

(b) Under a response action taken by a responsible party, the responsible party must assure that an occupational health and safety program is made available for the protection of workers at the response site, and that workers entering the response site are apprised of the response site hazards and provisions of the safety and health program.

(c) Under a Federal Fund-financed response, the lead agency must assure that a program for occupational safety and health is made available for the protection of workers at the response site, and that workers entering the response site are apprised of the response site hazards and provisions of the safety and health program. Any contract relating to a Federal Fund-financed response action under this Plan shall require the contractor at the response site to comply with this program and with any applicable provision of the OSH Act and State OSH laws as defined in § 300.38(a).

§ 300.39 Public information.

(a) When an incident occurs, it is imperative to give the public prompt, accurate information on the nature of the incident and the actions underway to mitigate the damage. OSCs/RPMs and community relations personnel should ensure that all appropriate public and private interests are kept informed and that their concerns are considered throughout a response. They should coordinate with available public affairs/community relations resources to carry out this responsibility.

(b) An on-scene news office may be established to coordinate media relations and to issue official Federal information on an incident. Whenever possible, it will be headed by a representative of the lead agency. The OSC/RPM determines the location of the on-scene news office, but every effort should be made to locate it near the scene of the incident. If a participating agency believes public interest warrants the issuance of statements and an on-scene news office has not been established, the affected agency should recommend its establishment. All Federal news releases or statements by participating agencies should be cleared through the OSC/RPM.

§ 300.40 OSC reports.

(a) Within 60 days after the conclusion of a major discharge of oil, a major hazardous substance, pollutant, or contaminant release, or when requested by the RRT, the EPA or USCG OSC shall submit to the RRT a complete report on the response operation and the actions taken. The OSC shall at the same time send a copy of the report to the NRT. The RRT shall review the OSC's report and prepare an endorsement to the NRT for review. This shall be accomplished within 30 days after the report has been received.

(b) The OSC's report shall accurately record the situation as it developed, the actions taken, the resources committed, and the problems encountered. The OSC's recommendations are a source for new procedures and policy.

(c) The format for the OSC's report shall be as follows:

(1) Summary of Events—a chronological narrative of all events, including:

(i) The cause of discharge or release;

(ii) The initial situation;

(iii) Efforts to obtain response by responsible parties;

(iv) The organization of the response, including State participation;

(v) The resources committed;

(vi) The location of the hazardous substance, pollutant, or contaminant release or oil discharge. For oil discharges, indicate whether the discharge was in connection with activities regulated under the Outer Continental Shelf Lands Act (OCSLA), the Trans-Alaska Pipeline Authority Act, or Deepwater Port Act;

(vii) Comments on whether the discharge or release might have or actually did affect natural resources;

(viii) Comments on Federal or State damage assessment activities and efforts to replace or restore damaged natural resources;

(ix) Details of any threat abatement action taken under CERCLA or under section 311(c) or (d) of the CWA; and

(x) Public information/community relations activities.

(2) Effectiveness of Removal Actions—A candid and thorough analysis of the effectiveness of removal actions taken by:

(i) The responsible party;

(ii) State and local forces;

(iii) Federal agencies and special forces; and

(iv) (If applicable) contractors, private groups, and volunteers.

(3) Problems Encountered—A list of problems affecting response with particular attention to problems of intergovernmental coordination.

(4) Recommendations—OSC recommendations, including at a minimum:

(i) Means to prevent a recurrence of the discharge or release;

(ii) Improvement of response actions; and

(iii) Any recommended changes in the National Contingency Plan or Federal regional plan.

Subpart D—Plans

SOURCE: 50 FR 47967, Nov. 20, 1985, unless otherwise noted.

§ 300.41 Regional and local plans.

(a) In addition to the National Contingency Plan (NCP), a Federal regional plan shall be developed for each standard Federal Region, Alaska, and the Caribbean, and, where practicable, a Federal local plan shall be developed.

(b) These plans will be available for inspection at EPA Regional Offices or USCG district offices. Addresses and telephone numbers for these offices may be found in the United States Government Manual (issued annually) or in local telephone directories.

§ 300.42 Regional contingency plans.

(a) The RRTs, working with the States, shall develop Federal regional plans for each standard Federal region, Alaska, and the Caribbean. The purpose of these plans is coordination of a timely, effective response by various Federal agencies and other organizations to discharges of oil and releases of hazardous substances, pollutants and contaminants in order to protect public health, welfare, and the environment. Regional contingency plans should include information on all useful facilities and resources in the region, from government, commercial, academic, and other sources. To the greatest extent possible, regional plans will follow the format of the National Contingency Plan, and should coordinate with the State plans and the Federal local plans as specified in § 300.43.

(b) SSCs shall organize and coordinate the contributions of scientists of each region to the response activities of the OSC/RPM and RRT to the greatest extent possible. SSCs, with advice from RRT members, shall also develop the parts of the regional plan that relates to scientific support.

(c) Regional plans shall contain lines of demarcation between the inland and coastal zones, as mutually agreed upon by USCG and EPA.

§ 300.43 Local contingency plans.

(a) Each OSC, in consultation with the RRT, should develop and maintain a Federal local plan for response in his or her area of responsibility, where necessary and practicable. In areas in which the USCG provides the OSC, such plans shall be developed in all cases. The plan should provide for a well-coordinated response that is integrated and compatible with the pollution response, fire, emergency, and disaster plans of local, State, and other non-Federal entities. The plan should identify the probable locations of discharges or releases; the available resources to respond to multi-media incidents, where such resources can be obtained; waste disposal methods and facilities consistent with local and State plans developed under the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.); and a local structure for responding to discharges or releases.

(b) While the OSC is responsible for developing Federal local plans, a successful planning effort will depend upon the full cooperation of all the agencies' representatives and the development of local capabilities to respond to discharges or releases. Particular attention should be given, during the planning process, to developing a multi-agency local response team for coordinating on-scene efforts. The RRT should ensure proper liaison between the OSC and local representatives.

Subpart E—Operational Response Phases for Oil Removal

SOURCE: 50 FR 47967, Nov. 20, 1985, unless otherwise noted.

§ 300.51 Phase I—Discovery and notification.

(a) A discharge of oil may be discovered through:

(1) A report submitted by the person in charge of the vessel or facility in accordance with statutory requirements;

(2) Deliberate search by patrols; and

(3) Random or incidental observation by government agencies or the public.

(b) All reports of discharges shall be made to the NRC. If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated OSC for the geographic area where the discharge occurs. All such reports shall be promptly relayed to the NRC. If it is not possible to notify the NRC or predesignated OSC immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the discharger notifies the NRC as soon as possible. Federal regional and Federal local plans shall provide for prompt reporting to the NRC, RRC, and appropriate State agency (as agreed upon with the State).

(c) Upon receipt of a notification of discharge, the NRC shall promptly notify the OSC. The OSC shall proceed with the following phases as outlined in Federal regional and Federal local plans.

§ 300.52 Phase II—Preliminary assessment and initiation of action.

(a) The OSC for a particular area is responsible for promptly initiating preliminary assessment.

(b) The preliminary assessment shall be conducted using available information, supplemented where necessary and possible by an on-scene inspection. The OSC shall undertake actions to:

(1) Evaluate the magnitude and severity of the discharge or threat to public health, welfare, or the environment;

(2) Assess the feasibility of removal;

(3) Identify potentially responsible parties; and

(4) Ensure that authority exists for undertaking additional response actions.

(c) The OSC, in consultation with legal authorities when appropriate, shall make a reasonable effort to have the discharger voluntarily and promptly perform removal actions. The OSC shall ensure adequate surveillance over whatever actions are initiated. If effective actions are not being taken to eliminate the threat, or if removal is not being properly done, the OSC shall, to the extent practicable under the circumstances, so advise the responsible party. If the responsible party does not take proper removal actions, or is unknown, or is otherwise unavailable, the OSC shall, pursuant to section 311(c)(1) of the CWA, determine whether authority for a Federal response exists, and, if so, take appropriate response actions. Where practicable, continuing efforts should be made to encourage response by responsible parties.

(d) The OSC should ensure that the trustees of affected natural resources are notified, in order that the trustees may initiate appropriate actions when natural resources have been or are likely to be damaged (see Subpart G of Part 300). Where practicable, the OSC should consult with trustees in such determinations.

§ 300.53 Phase III—Containment, countermeasures, cleanup, and disposal.

(a) Defensive actions should begin as soon as possible to prevent, minimize, or mitigate threat to the public health or welfare or the environment. Actions may include: Analyzing water samples to determine the source and spread of the oil; controlling the source of discharge; measuring and sampling; source and spread control or salvage operations; placement of physical barriers to deter the spread of the oil or to protect endangered species; control of the water discharged from upstream impoundment; and the use of chemicals and other materials in accordance with Subpart H, to restrain the spread of the oil and mitigate its effects.

(b) Appropriate actions should be taken to recover the oil or mitigate its effects. Of the numerous chemical or physical methods that may be used, the chosen methods should be the most consistent with protecting the public health and welfare and the environment. Sinking agents shall not be used.

(c) Oil and contaminated materials recovered in cleanup operations shall be disposed of in accordance with Federal regional and Federal local contingency plans.

§ 300.54 Phase IV—Documentation and cost recovery.

(a) Documentation shall be collected and maintained to support all actions taken under the CWA and to form the basis for cost recovery. In general, documentation should be sufficient to prove the source and circumstances of the incident, the responsible party or parties, and impact and potential impacts to the public health and welfare and the environment. When appropriate, documentation should also be collected for scientific understanding of the environment and for the research and development of improved response methods and technology. Damages to private citizens (including loss of earnings) are not addressed by this Plan. Evidentiary and cost documentation procedures and requirements are specified in the USCG Marine Safety Manual (Commandant Instruction M16000.3) and 33 CFR Part 153.

(b) OSCs shall submit OSC reports to the RRT as required by § 300.40.

(c) The OSCs shall ensure the necessary collection and safeguarding of information, samples, and reports. Samples and information must be gathered expeditiously during the response to ensure an accurate record of the impacts incurred. Documentation materials shall be made available to the trustees of affected natural resources.

(d) Information and reports obtained by the EPA or USCG OSC shall be transmitted to the appropriate offices responsible for follow-up actions.

§ 300.55 General pattern of response.

(a) When the OSC receives a report of a discharge, actions normally should be taken in the following sequence:

(1) Immediately notify the RRT and NRC when the reported discharge is an actual or potential major discharge.

(2) Investigate the report to determine pertinent information such as the threat posed to public health or welfare or the environment, the type and quantity of polluting material, and the source of the discharge.

(3) Officially classify the size of the discharge and determine the course of action to be followed.

(4) Determine whether a discharger or other person is properly carrying out removal. Removal is being done properly when:

(i) The cleanup is fully sufficient to minimize or mitigate threat to the public health, welfare, and the environment (removal efforts are "improper" to the extent that Federal efforts are necessary to further minimize or mitigate those threats); and

(ii) The removal efforts are in accordance with applicable regulations including this Plan.

(5) Determine whether a State or political subdivision has the capability to carry out response actions and a contract or cooperative agreement has been established with the appropriate fund administrator for this purpose.

(6) Notify the RRT (including the affected State) and the trustees of affected natural resources in accordance with the applicable regional plan.

(b) The preliminary inquiry will probably show that the situation falls into one of the five classes. These classes and the appropriate response to each are outlined below:

(1) If the investigation shows that no discharge occurred, or it shows a minor discharge with no removal action required, the case should be closed for response purposes.

(2) If the investigation shows a minor discharge with the responsible party taking proper removal action, contact should be established with the party. The removal action should be monitored to ensure continued proper action.

(3) If the investigation shows a minor discharge with improper removal action being taken, the following measures shall be taken:

(i) An immediate effort should be made to stop further pollution and remove past and on-going contamination.

(ii) The responsible party shall be advised of what action will be considered appropriate.

(iii) If the responsible party does not properly respond, he shall be notified of his potential liability for Federal response performed under the CWA. This liability includes all costs of removal and may include the costs of assessing and restoring damaged natural resources and other actual or necessary costs of a Federal response.

(iv) The OSC shall notify appropriate State and local officials, keep the RRT advised, and initiate Phase III operations as conditions warrant.

(v) Information shall be collected for possible recovery of response costs in accordance with § 300.54.

(4) When the investigation shows that an actual or potential medium oil discharge exists, the OSC shall follow the same general procedures as for a minor discharge. If appropriate, the OSC shall recommend activation of the RRT.

(5) When the investigation shows an actual or potential major oil discharge, the OSC shall follow the same procedures as for minor and medium discharges.

§ 300.56 [Reserved]

§ 300.57 Waterfowl conservation.

The DOI representatives and State liaison to the RRT shall arrange for the coordination of professional and volunteer groups permitted and trained to participate in waterfowl dispersal, collection, cleaning, rehabilitation, and recovery activities (consistent with 16 U.S.C. 703 through 712 and applicable State laws). Federal regional and Federal local plans will, to the extent practicable, identify organizations or institutions that are permitted to participate in such activities and operate such facilities. Waterfowl conservation activities will normally be included in Phase III response actions (§ 300.53 of this subpart).

§ 300.58 Funding.

(a) If the person responsible for the discharge does not act promptly or take proper removal actions, or if the person responsible for the discharge is unknown, Federal discharge removal actions may begin under section 311(c)(1) of the CWA. The discharger, if known, is liable for the costs of Federal removal in accordance with section 311(f) of the CWA and other Federal laws.

(b) Actions undertaken by the participating agencies in response to pollution shall be carried out under existing programs and authorities when available. This Plan intends that Federal agencies will make resources available, expend funds, or participate in response to oil discharges under their existing authority. Authority to expend resources will be in accordance with agencies' basic statutes and, if required, through interagency agreements. Where the OSC requests assistance from a Federal agency, that agency may be reimbursed in accordance with the provisions of 33 CFR 153.407. Specific interagency reimbursement agreements may be signed when necessary to ensure that the Federal resources will be available for a timely response to a discharge of oil. The ultimate decisions as to the appropriateness of expending funds rests with the agency that is held accountable for such expenditures.

(c) The OSC shall exercise sufficient control over removal operations to be able to certify that reimbursement from the following funds is appropriate:

(1) The oil pollution fund, administered by the Commandant, USCG, has been established pursuant to section 311(k) of the CWA. Regulations governing the administration and use of the fund are contained in 33 CFR Part 153.

(2) The fund authorized by the Deepwater Port Act is administered by the Commandant, USCG. Governing regulations are contained in 33 CFR Parts 136 and 150.

(3) The fund authorized by the Outer Continental Shelf Lands Act, as amended, is administered by the Commandant, USCG. Governing regulations are contained in 33 CFR Parts 136 and 150.

(4) The fund authorized by the Trans-Alaska Pipeline Authorization Act is administered by a Board of Trustees under the purview of the Secretary of the Interior. Governing regulations are contained in 43 CFR Part 29.

(d) Response actions other than removal, such as scientific investigations not in support of removal actions or law enforcement, shall be provided by the agency with legal responsibility for those specific actions.

(e) The funding of a response to a discharge from a Federally operated or supervised facility or vessel is the responsibility of the operating or supervising agency.

(f) The following agencies have funds available for certain discharge removal actions:

(1) EPA may provide funds to begin timely discharge removal actions when the OSC is an EPA representative.

(2) The USCG pollution control efforts are funded under "operating expenses." These funds are used in accordance with agency directives.

(3) The Department of Defense has two specific sources of funds which may be applicable to an oil discharge under appropriate circumstances. (This does not consider military resources which might be made available under specific conditions.)

(i) Funds required for removal of a sunken vessel or similar obstruction of navigation are available to the Corps of Engineers through Civil Works Appropriations, Operations and Maintenance, General.

(ii) The U.S. Navy may conduct salvage operations contingent on defense operational commitments, when funded by the requesting agency. Such funding may be requested on a direct cite basis.

(4) Pursuant to section 311(c)(2)(H) of the CWA, the State or States affected by a discharge of oil may act where necessary to remove such discharge and may, pursuant to 33 CFR Part 153, be reimbursed from the pollution revolving fund for the reasonable costs incurred in such a removal.

(i) Removal by a State is necessary within the meaning of section 311(c)(2)(H) of the CWA when the OSC determines that the owner or operator of the vessel, onshore facility, or offshore facility from which the discharge occurs does not effect removal properly, or is unknown, and that:

(A) State action is required to minimize or mitigate significant threat to the public health or welfare which Federal action cannot minimize or mitigate; or

(B) Removal or partial removal can be done by the State at a cost which is less than or not significantly greater than the cost which would be incurred by the Federal departments or agencies.

(ii) State removal actions must be in compliance with this Plan in order to qualify for reimbursement.

(iii) State removal actions are considered to be Phase III actions, under the same definitions applicable to Federal agencies.

(iv) Actions taken by local governments in support of Federal discharge removal operations are considered to be actions of the State for purposes of this section. Federal regional and Federal local plans shall show what funds and resources are available from participating agencies under various conditions and cost arrangements. Interagency agreements may be necessary to specify when reimbursement is required.

Subpart F—Hazardous Substances Reponse

SOURCE: 50 FR 47969, Nov. 20, 1985, unless otherwise noted.

§ 300.61 General.

(a) This subpart establishes methods and criteria for determining the appropriate extent of response authorized by CERCLA:

(1) When there is a release of a hazardous substance or there is a substantial threat of such a release into the environment; or

(2) When there is a release or substantial threat of a release into the environment of any pollutant or contaminant which may present an imminent and substantial danger to the public health or welfare.

(b) Section 104(a)(1) of CERCLA authorizes removal or remedial action unless it is determined that such removal or remedial action will be done properly by the owner or operator of the vessel or facility from which the release or threat of release emanates, or by any other responsible party. If appropriate response actions are not being taken or executed properly, including in a timely manner, the lead agency may initiate proper action, terminate any improper actions and shall so advise any known responsible party, and complete response activities.

(c) In determining the need for and in planning or undertaking Fund-financed action, the lead agency shall, to the extent practicable:

(1) Engage in prompt response.

(2) Encourage State participation in response actions (see § 300.62).

(3) Conserve Fund monies by encouraging private party cleanup.

(4) Be sensitive to local community concerns (see § 300.67).

(5) Rely on established technology, but also consider alternative and innovative technology when feasible and cost-effective.

(6) Involve the RRT in both removal and remedial response actions at appropriate decisionmaking stages.

(7) Encourage the involvement and sharing of technology by industry and other experts.

(8) Encourage the involvement of organizations to coordinate responsible party actions, foster site cleanup, and provide technical advice to the public, Federal and State governments, and industry.

(d) The lead agency shall, as practicable, provide surveillance over actions taken by responsible parties to ensure that a response is conducted consistent with this Plan. The lead agency also, as practicable, shall monitor the actions of third parties preauthorized under § 300.25(d).

(e)(1) This subpart does not establish any preconditions to enforcement action by either the Federal or State governments to compel response actions by responsible parties.

(2) While some of this subpart is oriented toward Federally funded response actions, this subpart may be used as guidance concerning methods and criteria for response actions by other parties under other funding mechanisms. Except as provided in § 300.71, nothing in this part limits the rights of any person to seek recovery of response costs from responsible parties pursuant to CERCLA section 107.

(3) Activities by the Federal and State governments in implementing this subpart are discretionary governmental functions. This subpart does not create in any private party a right to Federal response or enforcement action. This subpart does not create any duty of the Federal government to take any response action at any particular time.

§ 300.62 State role.

(a)(1) States are encouraged to undertake actions authorized under this subpart. Section 104(d)(1) of CERCLA authorizes the Federal government to enter into contracts or cooperative agreements with the State to take Fund-financed response actions authorized under CERCLA, when the Federal government determines that the State has the capability to undertake such actions. A State agency acting under such an agreement is referred to as the lead agency.

(2) Cooperative agreements or State Superfund contracts are unnecessary for response actions that are not Fund-financed, including any State or other party actions. Coordination with EPA or USCG is encouraged in such situations, however. If a State intends to use expenses incurred as part or all of its cost-sharing obligations under section 104(c)(3) of CERCLA, it must enter into a response agreement to this effect.

(b) EPA will provide assistance from the Fund and other Federal agencies will provide assistance under their existing authority to States pursuant to a contract or cooperative agreement. The cooperative agreement can authorize States to undertake most actions specified in this subpart. However, certain authorities are reserved for the Federal lead agency.

(c) Contracts and cooperative agreements between the State(s) and Federal government for Fund-financed remedial action are subject to section 104(c)(3) of CERCLA. Such agreements are not a precondition to access, information gathering, investigations, studies, or liability pursuant to sections 106 and 107 of CERCLA.

(d) Prior to remedial action as defined in section 101(24) of CERCLA, the State must make a firm commitment, through either a new or amended cooperative agreement or State contract, to provide its required cost share for remedial implementation by:

(1) Authorizing the reduction of a State credit to cover its share of costs;

(2) Identifying currently available funds earmarked for remedial implementation; or

(3) Submitting a schedule with milestones for obtaining necessary funds during the period of remedial implementation.

(e) State credits allowed under section 104(c)(3) of CERCLA must be documented on a site-specific basis for State out-of-pocket, non-Federal eligible response costs between January 1, 1978, and December 11, 1980. Prior to remedial action at a site, the State must submit its accounting of these costs as a part of the cooperative agreement application, or as a part of the EPA State agreement. State credits will be applied against State cost shares for Federally funded remedial actions. A State cannot be reimbursed from the Fund for credit in excess of its matching share nor may the credit be applied to any other site.

(f) Pursuant to section 104(c)(2) of CERCLA, prior to determining any appropriate remedial action, the Federal lead agency shall consult with the affected State or States.

(g) States are encouraged to participate in all RRT planning and response activities.

(h) State and local public safety organizations are normally expected to initiate public safety measures (e.g., actions to limit public access to a site) and are responsible for directing evacuations pursuant to existing State/local procedures.

§ 300.63 Discovery or notification.

(a) A release may be discovered through:

(1) Notification in accordance with sections 103 (a) or (c) of CERCLA;

(2) Investigation by government authorities conducted in accordance with section 104(e) of CERCLA or other statutory authority;

(3) Notification of a release by a Federal or State permit holder when required by its permit;

(4) Inventory efforts or random or incidental observation by government agencies or the public;

(5) Other sources.

(b) All reports of releases shall be made to the NRC. If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated OSC for the geographic area where the release occurs. All such reports shall be promptly relayed to the NRC. If it is not possible to notify the NRC or predesignated OSC immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the releaser notifies the NRC as soon as possible.

(c) Upon receipt of a notification of a release, the NRC shall promptly notify the appropriate OSC. The OSC shall notify the Governor of the State affected by the release.

(d)(1) When the OSC is notified of a release which may require response pursuant to § 300.65(b), a preliminary assessment shall, as appropriate, be promptly undertaken pursuant to § 300.64.

(2) When notification indicates that action pursuant to § 300.65(b) is not required, site evaluation shall, as appropriate, be undertaken by the lead agency pursuant to § 300.66.

§ 300.64 Preliminary assessment for removal actions.

(a) A preliminary assessment of a release or threat of a release identified for possible CERCLA response pursuant to § 300.65 shall, as appropriate, be undertaken by the lead agency as promptly as possible. The lead agency shall, as appropriate, base the assessment on readily available information. This assessment may include but is not limited to:

(1) Identification of the source and nature of the release or threat of release;

(2) Evaluation by HHS or by other sources (e.g., State public health agencies) of the threat to public health;

(3) Evaluation of the magnitude of the potential threat;

(4) Evaluation of factors necessary to make the determination of whether a removal is necessary; and

(5) Determination if a non-Federal party is undertaking proper response.

(b) A preliminary assessment of releases or threats of releases from hazardous waste management facilities may include collection or review of data such as site management practices, information from generators, photographs, analysis of historical photographs, literature searches, and personal interviews conducted as appropriate. In addition, a perimeter (off-site) inspection may be necessary to determine the potential for a release. Finally, if more information is needed, a site visit may be performed, if conditions are such that it may be performed safely.

(c) A preliminary assessment shall be terminated when the OSC or lead agency determines:

(1) There is no release or threat of release;

(2) The source is neither a vessel nor a facility;

(3) The release does not involve a hazardous substance, nor a pollutant or contaminant;

(4) The amount, quantity, and concentration released does not warrant Federal response;

(5) A party responsible for the release, or any other person, is providing appropriate response, and on-scene monitoring by the government is not required; or

(6) The assessment is completed.

(d) If it is determined during the assessment that natural resources have been, or are likely to be, damaged, the OSC or lead agency shall, where possible, ensure that the trustees of the affected natural resources are notified in order that the trustees may initiate appropriate actions as identified in § 300.74(b). Where practicable, the OSC shall consult with trustees in making such determinations.

(e) If the preliminary assessment indicates that removal action under § 300.65 is not required, but that remedial actions under § 300.68 may be necessary, the lead agency shall, as appropriate, initiate site evaluation pursuant to § 300.66.

§ 300.65 Removals.

(a)(1) In determining the appropriate extent of action to be taken at a given release, the lead agency shall first review the preliminary assessment and the current site conditions to determine if removal action is appropriate.

(2) Where the responsible parties are known, an effort initially shall be made, to the extent practicable considering the exigencies of the circumstances, to have them perform the necessary removal actions. Where responsible parties are unknown, an effort initially shall be made, to the extent practicable considering the exigencies of the circumstances, to locate them and have them perform the necessary removal action.

(3) This section does not apply to removal actions taken pursuant to section 104(b) of CERCLA. The criteria for such actions are set forth in section 104(b).

(b)(1) At any release, regardless of whether the site is included on the National Priorities List, where the lead agency determines that there is a threat to public health or welfare or the environment, based on the factors in paragraph (b)(2) of this section, the lead agency may take any appropriate action to abate, minimize, stabilize, mitigate, or eliminate the release or threat of release, or the threat resulting from that release or threat of release.

(2) The following factors shall be considered in determining the appropriateness of a removal action pursuant to this subsection:

(i) Actual or potential exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chain;

(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(iii) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;

(iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;

(v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

(vi) Threat of fire or explosion;

(vii) The availability of other appropriate Federal or State response mechanisms to respond to the release;

(viii) Other situations or factors which may pose threats to public health or welfare or the environment.

(3) Removal actions, other than those authorized under section 104(b) of CERCLA, shall be terminated after $1 million has been obligated for the action or six months have elapsed from the date of initial response, unless the lead agency determines that:

(i) There is an immediate risk to public health or welfare or the environment;

(ii) Continued response actions are immediately required to prevent, limit, or mitigate an emergency; and

(iii) Such assistance will not otherwise be provided on a timely basis.

(4) If the lead agency determines that a removal action pursuant to this subsection is appropriate, actions shall, as appropriate, begin as soon as possible to prevent, minimize, or mitigate the threat to public health or welfare or the environment. The lead agency shall, at the earliest possible time, also make any necessary determinations contained in paragraph (b)(3) of this section.

(c) The following removal actions are, as a general rule, appropriate in the following situations; however, this list does not limit the lead agency from taking any other actions deemed necessary in response to any situation or preclude the lead agency from deferring response action to other appropriate Federal or State enforcement or response authorities:

(1) Fences, warning signs, or other security or site control precautions—where humans or animals have access to the release;

(2) Drainage controls (e.g., run-off or run-on diversion)—where precipitation or run-off from other sources (e.g., flooding) may enter the release area from other areas;

(3) Stabilization of berms, dikes, or impoundments—where needed to maintain the integrity of the structures;

(4) Capping of contaminated soils or sludges—where needed to reduce migration of hazardous substances or pollutants or contaminants into soil, ground water, or air;

(5) Using chemicals and other materials to retard the spread of the release or to mitigate its effects—where the use of such chemicals will reduce the spread of the release;

(6) Removal of highly contaminated soils from drainage or other areas—where removal will reduce the spread of contamination;

(7) Removal of drums, barrels, tanks, or other bulk containers that contain or may contain hazardous substances or pollutants or contaminants—where it will reduce the likelihood of spillage, leakage, exposure to humans, animals or food chain, or fire or explosion;

(8) Provision of alternative water supply—where it will reduce the likelihood of exposure of humans or animals to contaminated water.

(d) Where necessary to protect public health or welfare, the lead agency will request that FEMA conduct a temporary relocation or evacuation.

(e) If the lead agency determines that the removal action will not fully address the threat or potential threat posed by the release and the release may require remedial action, the lead agency shall ensure an orderly transition from removal to remedial response activities.

(f) Although Fund-financed removal actions and removal actions pursuant to CERCLA section 106 are not required to comply with other Federal, State, and local laws governing the removal activity, including permit requirements, such removal actions shall, to the greatest extent practicable considering the exigencies of the circumstances, attain or exceed applicable or relevant and appropriate Federal public health and environmental requirements. Other Federal criteria, advisories, and guidance and State standards also shall, as appropriate, be considered in formulating the removal action.

(g) Fund-financed removal actions and removal actions pursuant to section 106 of CERCLA involving the storage, treatment, or disposal of hazardous substances or pollutants or contaminants at off-site facilities shall involve only off-site facilities that are operating under appropriate Federal or State permits or authorization and other legal requirements.

(h) Removal actions pursuant to section 106 of CERCLA are exempt from the following requirements of this section:

(1) Section 300.65(a)(2) requirement to locate responsible parties and have them undertake the response.

(2) Section 300.65(b)(2)(vii) requirement to consider the availability of other appropriate Federal or State re-

sponse and enforcement mechanisms to respond to the release.

(3) Section 300.65(b)(3) requirement to terminate response after $1 million has been obligated or six months have elapsed from the date of the initial response.

(i) Other private party responses not pursuant to section 106 of CERCLA are exempt from paragraphs (b)(2)(vii) and (b)(3) of this section.

§ 300.66 Site evaluation phase and National Priorities List determination.

(a) *The site evaluation phase.* (1) This phase of response includes activities beginning with discovery of a release and extends through the initial evaluation (preliminary assessment and site inspection—see § 300.64). The purpose of the site evaluation phase is to further categorize the nature of any releases and potential threats to public health and welfare and the environment and to collect data as required to determine whether a site should be included on the National Priorities List (NPL). (See § 300.66(b) and (c).)

(2) Pursuant to sections 104(b) and (e) of CERCLA and other authorities, the lead agency may undertake preliminary assessments and site inspections to gather appropriate information to determine if a release warrants response and, if so, its priority for response.

(3) For response actions that may be taken pursuant to § 300.68, a preliminary assessment consists of a review of existing data and may include an off-site reconnaissance. The purposes of such a preliminary assessment are:

(i) To eliminate from further consideration those releases where available data indicate no threat or potential threat to public health or the environment exists;

(ii) To determine if there is any potential need for removal action;

(iii) To establish priority for scheduling a site inspection.

(4) A site inspection consists of a visual inspection of the site and routinely includes collection of samples. There are several major purposes for a site inspection:

(i) To determine which releases pose no threat or potential threat to public health and the environment;

(ii) To determine if there is any immediate threat to persons living or working near the release;

(iii) To collect data, where appropriate, to determine whether a site where a release has occurred or may occur should be included on the NPL.

(b) *Methods for establishing priorities.* (1) Section 105(8)(A) of CERCLA requires the President to include as part of the Plan criteria for establishing priorities among releases and potential releases. Three mechanisms are set forth here for that purpose: The Hazard Ranking System (HRS); designation by the States of their top priority releases; and determination that a site poses a significant threat to public health or welfare or the environment as indicated in paragraph (b)(4) of this section. These criteria will be used to establish and amend the NPL (see § 300.66(c)).

(2) The primary mechanism for identifying releases for inclusion on the NPL will be scores calculated by applying the HRS (Appendix A).

(3) Each State may designate a release as the State's highest priority release by certifying in writing, signed by the Governor or the Governor's designee, that the release presents the greatest danger to public health or welfare or the environment among known releases in the State. Each State may designate one top priority site over the life of the NPL.

(4) In addition to those releases whose HRS scores qualify them for the NPL, EPA may include on the NPL any other release if:

(i) The Agency for Toxic Substances and Disease Registry of the Department of Health and Human Services has issued a public health advisory which recommends dissociation of individuals from the release;

(ii) EPA determines that the release poses a significant threat to public health; and

(iii) EPA anticipates that it will be more cost-effective to use its remedial authority than to use removal authority to respond to the release.

(c) *The National Priorities List.* (1) Section 105(8)(B) of CERCLA requires the President to establish a list of at least 400 releases and potential releases, based upon the criteria developed pursuant to section 105(8)(A) of the Act. CERCLA also requires the States to identify their priorities at least annually and requires that each State's designated top priority releases be included among the one hundred (100) highest priority releases, to the degree practicable. The process for establishing the NPL is set forth below.

(2) The NPL serves as a basis to guide the allocation of Fund resources among releases. Except as provided by CERCLA section 111(e)(3), Federal facilities listed on the NPL are not eligible for Fund-financed remedial actions other than actions specified in CERCLA section 111(c). Only those releases included on the NPL will be considered eligible for Fund-financed remedial action. Inclusion on the NPL is not a precondition to liability pursuant to Agency action under CERCLA section 106 or to action under CERCLA section 107, for recovery of non-Fund-financed costs or Fund-financed costs other than remedial construction costs.

(3) States that wish to submit candidates for the NPL must use the HRS (Appendix A of this part) to score the releases and furnish EPA with appropriate documentation for the scores.

(4) EPA will notify the States at least thirty days prior to the deadline for submitting candidate releases for the NPL or any revisions.

(5) EPA will review the States' HRS scoring documents and revise the application of the hazard ranking criteria when appropriate. EPA will add any additional priority releases known to the Agency after consultation with the States. Taking into account the HRS scores, the States' top priority releases, and the criteria specified in paragraph (b)(4) of this section, EPA will compile the NPL.

(6) Minor differences in HRS scores among releases may not accurately differentiate among threats represented by the releases. Thus, releases having similar scores may be presented in groups on the NPL.

(7) Sites may be deleted from or recategorized on the NPL where no further response is appropriate. In making this determination, EPA will consider whether any of the following criteria has been met:

(i) EPA, in consultation with the State, has determined that responsible or other parties have implemented all appropriate response actions required;

(ii) All appropriate Fund-financed response under CERCLA has been implemented, and EPA, in consultation with the State, has determined that no further cleanup by responsible parties is appropriate; or

(iii) Based on a remedial investigation, EPA, in consultation with the State, has determined that the release poses no significant threat to public health or the environment and, therefore, taking of remedial measures is not appropriate.

(8) All releases deleted from the NPL are eligible for further Fund-financed remedial actions should future conditions warrant such action.

(9) EPA will submit the recommended NPL to the NRT for review and comment.

(10) EPA will revise and publish the NPL at least annually.

§ 300.67 Community relations.

(a) The lead agency shall develop and implement a formal community relations plan for removal actions taken pursuant to § 300.65 and for remedial action at NPL sites, including enforcement actions, except as provided for in § 300.67(b). Such plans must specify the communications activities which will be undertaken during the response and shall include provision for a public comment period on the alternatives analysis undertaken pursuant to § 300.68. The use of the RRT to assist community relations activities shall be considered in developing community relations plans.

(b) In the case of actions taken pursuant to § 300.65 or enforcement action to compel response analogous to § 300.65, or other short-term action needed to abate a threat to public health or welfare or the environment, a spokesperson will be designated by the lead agency. The spokesperson will inform the community of actions taken, respond to inquiries, and provide information concerning the release. In such cases, if the action is of short duration, or if response is needed immediately, a formal plan is not necessary. However, if the removal action is expected to extend or does extend beyond 45 days, a formal plan must be developed and implemented.

(c) For all remedial actions pursuant to CERCLA section 106 at NPL sites including Fund-financed and enforcement actions, a community relations plan must be developed and approved prior to initiation of field activities and implemented during the course of the action. In enforcement actions, a responsible party may be permitted with lead agency oversight to implement appropriate parts of the community relations plan.

(d) In remedial actions at NPL sites, including Fund-financed and enforcement actions, feasibility studies that outline alternative remedial measures must be provided to the public for review and comment for a period of not less than 21 calendar days. Such review and comment shall precede selection of the remedial response. Public meeting(s) shall, in most circumstances, be held during the comment period. The lead agency may also provide the public with an opportunity to comment during the development of the feasibility study.

(e) A document which summarizes the major issues raised by the public and how they are addressed must be included in the decision document approving the remedy.

(f) In enforcement actions in litigation under CERCLA section 106, the community relations plan, including provision for public review of any feasibility study prepared for source control or management of migration measures, may be modified or adjusted at the direction of the court of jurisdiction or to accommodate the court calendar.

(g) Where responsible parties agree to implement the permanent site remedy pursuant to an administrative order on consent, the lead agency shall provide public notice and a 30-day period for public comment, including comment on remedial measures. Where settlement is embodied in a consent decree, public notice and opportunity for public comment shall be provided in accordance with 28 CFR 50.7. A document summarizing the major issues raised by the public and how they are addressed will be prepared.

§ 300.68 Remedial action.

(a) *Introduction.* (1) Remedial actions are those responses to releases that are consistent with permanent remedy to prevent or minimize the release of hazardous substances or pollutants or contaminants so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment [see CERCLA section 101(24)]. Fund-financed remedial action, excluding remedial planning activities pursuant to CERCLA section 104(b), may be taken only at sites listed on the NPL.

(2) The Remedial Project Manager (RPM) shall carry out responsibilities in a remedial action as delineated in § 300.33(b).

(3) Federal, State, and local permits are not required for Fund-financed remedial action or remedial actions taken pursuant to Federal action under section 106 of CERCLA. However, remedial actions that involve storage, treatment, or disposal of hazardous substances or pollutants or contaminants at off-site facilities shall involve only such off-site facilities that are operating under appropriate Federal or State permits or authorization and other legal requirements.

(b) *State involvement.* (1) States are encouraged to undertake Fund-financed remedial response in accordance with § 300.62 of this Plan.

(2) States must meet the requirements of CERCLA section 104(c)(3) prior to initiation of a Fund-financed remedial action.

(3) Planning activities associated with remedial actions taken pursuant to CERCLA section 104(b) shall not require a State cost share unless the facility was owned at the time of any disposal of hazardous substances therein by the State or a political subdivision thereof. Such planning activities include, but are not limited to, remedial investigations, feasibility studies, and design of the proposed remedy. For sites owned by a State or

its political subdivision, cost sharing commitment is required prior to remedial action.

(c) *Operable unit.* Response action may be conducted in operable units. Operable units may be conducted as remedial and/or removal actions.

(1) Response actions may be separated into operable units consistent with achieving a permanent remedy. These operable units may include removal actions pursuant to § 300.65(b), and/or remedial actions involving source controls, and/or management of migration.

(2) The RPM shall, as appropriate, recommend whether or not operable units should be implemented prior to selection of the appropriate final remedial measure.

(3) Implementation of operable units may begin before selection of an appropriate final remedial action if such measures are cost-effective and consistent with a permanent remedy. Compliance with § 300.68(b) is a prerequisite to implementing remedial operable units.

(d) *Remedial Investigation/Feasibility Study* (RI/FS). An RT/FS shall, as appropriate, be undertaken by the lead agency conducting the remedial action to determine the nature and extent of the threat presented by the release and to evaluate proposed remedies. This includes sampling, monitoring, and exposure assessment, as necessary, and includes the gathering of sufficient information to determine the necessity for and proposed extent of remedial action. Part of the RI/FS may involve assessing whether the threat can be prevented or minimized by controlling the source of the contamination at or near the area where the hazardous substances were originally located (source control measures) and/or whether additional actions will be necessary because the hazardous substances have migrated from the area of or near their original location (management of migration). Planning for remedial action at these releases shall, as appropriate, also assess the need for removals. During the remedial investigation, the original scoping of the project may be modified based on the factors in § 300.68(e).

(e) *Scoping of response actions during the remedial investigation.* (1) The lead agency, in cooperation with the State(s), will examine available information and determine, based on the factors indicated in paragraph (e)(2) of this section, the type of response that may be needed to remedy the release. This scoping will serve as a basis for requesting funding for a necessary removal action and may serve as the basis for further supporting funding requests for a remedial investigation or feasibility study. Initial analysis shall indicate the extent to which the release or threat of release may pose a threat to public health or welfare or the environment, indicate the types of removal measures and/or remedial measures suitable to abate the threat, and set priorities for implementation of the measures. Initial analysis shall, as appropriate, also provide a preliminary determination of the extent to which Federal environmental and public health requirements are applicable or relevant and appropriate to the specific site and the extent to which other Federal criteria, advisories, and guidance and State standards are to be used in developing the remedy.

(2) The following shall, as appropriate, be assessed in determining whether and what type of remedial and/or removal actions will be considered:

(i) Population, environmental, and welfare concerns at risk;

(ii) Routes of exposure;

(iii) Amount, concentration, hazardous properties, environmental fate and transport (e.g., ability and opportunities to bioaccumulate, persistence, mobility, etc.), and form of the substance(s) present;

(iv) Hydrogeological factors (e.g., soil permeability, depth to saturated zone, hydrologic gradients, proximity to a drinking water aquifer, floodplains and wetlands proximity);

(v) Current and potential ground water use (e.g., the appropriate ground water classes under the system established in the EPA Ground-Water Protection Strategy);

(vi) Climate (rainfall, etc.);

(vii) The extent to which the source can be adequately identified and characterized;

(viii) Whether substances at the site may be reused or recycled;

(ix) The likelihood of future releases if the substances remain on-site;

(x) The extent to which natural or man-made barriers currently contain the substances and the adequacy of the barriers;

(xi) The extent to which the substances have migrated or are expected to migrate from the area of their original location, or new location if relocated, and whether future migration may pose a threat to public health welfare or the environment;

(xii) The extent to which Federal environmental and public health requirements are applicable or relevant and appropriate to the specific site, and the extent to which other Federal criteria, advisories, and guidance and State standards are to be considered in developing the remedy;

(xiii) The extent to which contamination levels exceed applicable or relevant and appropriate Federal requirements or other Federal criteria, advisories, and guidance and State standards;

(xiv) Contribution of the contamination to an air, land, water, and/or food chain contamination problem;

(xv) Ability of responsible party to implement and maintain the remedy until the threat is permanently abated;

(xvi) For Fund-financed responses, the availability of other appropriate Federal or State response and enforcement mechanisms to respond to the release; and

(xvii) Other appropriate matters may be considered.

(3) As a remedial investigation progresses, the project may be modified if the lead agency determines that, based on the factors in § 300.68(e)(2), such modifications would be appropriate.

(f) *Development of alternatives.* (1) To the extent that it is both possible and appropriate, at least one remedial alternative shall be developed as part of the feasibility study (FS) in each of the following categories:

(i) Alternatives for treatment or disposal at an off-site facility, as appropriate;

(ii) Alternatives that attain applicable or relevant and appropriate Federal public health and environmental requirements;

(iii) As appropriate, alternatives that exceed applicable or relevant and appropriate Federal public health and environmental requirements;

(iv) As appropriate, alternatives that do not attain applicable or relevant and appropriate Federal public health and environmental requirements but will reduce the likelihood of present or future threat from the hazardous substances and that provide significant protection to public health and welfare and the environment. This must include an alternative that closely approaches the level of protection provided by the applicable or relevant and appropriate requirements;

(v) No action alternative.

(2) These alternatives, including those in paragraph (f)(1)(iv) of this section, shall, as appropriate, be developed based upon the analysis conducted under paragraphs (c), (d), and (e) of this section. The alternatives shall, as appropriate, consider and integrate waste minimization, destruction, and recycling.

(g) *Initial screening of alternatives.* The alternatives developed under paragraph (f) of this section will be subject to an initial screening to narrow the list of potential remedial actions for further detailed analysis. When an alternative is eliminated in screening, the rationale shall be documented in the feasibility study. Three broad criteria shall, as appropriate, be used in the initial screening of alternatives:

(1) *Cost.* For each alternative, the cost of implementing the remedial action must be considered, including operation and maintenance costs. An alternative that far exceeds the costs of other alternatives evaluated and that does not provide substantially greater public health or environmental protection or technical reliability shall usually be excluded from further consideration. For purposes of this paragraph, an alternative that meets or exceeds applicable or relevant and appropriate Federal public health and environmental requirements provides substantially greater protection than

do alternatives that do not meet such requirements.

(2) *Acceptable engineering practices.* Alternatives must be feasible for the location and conditions of the release, applicable to the problem, and represent a reliable means of addressing the problem.

(3) *Effectiveness.* Those alternatives that do not effectively contribute to the protection of public health and welfare and the environment shall not be considered further. If an alternative has significant adverse effects, and very limited environmental benefits, it shall also be excluded from further consideration.

(h) *Detailed analysis of alternatives.* (1) A more detailed evaluation will be conducted of the limited number of alternatives that remain after the initial screening in § 300.68(g).

(2) The detailed analysis of each alternative shall, as appropriate, include:

(i) Refinement and specification of alternatives in detail, with emphasis on use of established technology. Innovative or advanced technology shall, as appropriate, be evaluated as an alternative to conventional technology;

(ii) Detailed cost estimation, including operation and maintenance costs, and distribution of costs over time;

(iii) Evaluation in terms of engineering implementation, reliability, and constructability;

(iv) An assessment of the extent to which the alternative is expected to effectively prevent, mitigate, or minimize threats to, and provide adequate protection of public health and welfare and the environment. This shall include an evaluation of the extent to which the alternative attains or exceeds applicable or relevant and appropriate Federal public health and environmental requirements. Where the analysis determines that Federal public health and environmental requirements are not applicable or relevant and appropriate, the analysis shall, as appropriate, evaluate the risks of the various exposure levels projected or remaining after implementation of the alternative under consideration;

(v) An analysis of whether recycle/reuse, waste minimization, waste biodegradation, or destruction or other advanced, innovative, or alternative technologies is appropriate to reliably minimize present or future threats to public health or welfare or the environment;

(vi) An analysis of any adverse environmental impacts, methods for mitigating these impacts, and costs of mitigation.

(3) In performing the detailed analysis of alternatives, it may be necessary to gather additional data to complete the analysis.

(i) *Selection of remedy.* (1) The appropriate extent of remedy shall be determined by the lead agency's selection of a cost-effective remedial alternative that effectively mitigates and minimizes threats to and provides adequate protection of public health and welfare and the environment. Except as provided in § 300.68(i)(5), this will require selection of a remedy that attains or exceeds applicable or relevant and appropriate Federal public health and environmental requirements that have been identified for the specific site.

(2) In selecting the appropriate extent of remedy from among the alternatives that will achieve adequate protection of public health and welfare and the environment in accordance with § 300.68(i)(1), the lead agency will consider cost, technology, reliability, administrative and other concerns, and their relevant effects on public health and welfare and the environment.

(3) If there are no applicable or relevant and appropriate Federal public health or environmental requirements, the lead agency will select that cost-effective alternative that effectively mitigates and minimizes threats to and provides adequate protection of public health and welfare and the environment, considering cost, technology, and the reliability of the remedy.

(4) Pertinent other Federal criteria, advisories, and guidance and State standards will be considered and may be used in developing alternatives, with adjustments for site-specific circumstances.

(5) Notwithstanding § 300.68(i)(1), the lead agency may select an alternative that does not meet applicable or

relevant and appropriate Federal public health or environmental requirements in any of the following circumstances:

(i) The selected alternative is not the final remedy and will become part of a more comprehensive remedy;

(ii) *Fund-balancing:* For Fund-financed responses only, the need for protection of public health and welfare and the environment at the facility under consideration for all of the alternatives that attain or exceed applicable or relevant and appropriate Federal requirements is outweighed by the need for action at other sites that may present a threat to public health or welfare or the environment, considering the amount of money available in the Fund. In the event of Fund-balancing, the lead agency shall select the alternative which most closely approaches the level of protection provided by applicable or relevant and appropriate Federal requirements, considering the specific Fund-balanced sum of money available for the facility under consideration. Fund-balancing is not a consideration in determining the appropriate extent of remedy when the response will be performed or funded by a responsible party;

(iii) *Technical impracticality:* Where no alternative that attains or exceeds applicable or relevant and appropriate Federal public health and environmental requirements is technically practical to implement at the specific site in question from an engineering perspective, the lead agency shall select the alternative that is reasonable to implement from an engineering perspective and that most closely approaches the level of protection provided by applicable or relevant and appropriate Federal public health and environmental requirements.

(iv) *Unacceptable environmental impacts:* Where all the alternatives that attain or exceed applicable or relevant Federal public health and appropriate environmental requirements will result in significant adverse environmental impacts if implemented, the lead agency shall select the alternative that most closely approaches the level of protection provided by applicable or relevant and appropriate Federal public health and environmental requirements, without resulting in significant adverse environmental impacts.

(v) Where the remedy is to be carried out pursuant to Federal action under CERCLA section 106, the Fund is unavailable, there is a strong public interest in expedited cleanup, and the litigation probably would not result in the desired remedy, the lead agency shall select the alternative that most closely approaches the level of protection provided by applicable or relevant and appropriate Federal public health and environmental requirements in light of the strong public interest in expedited cleanup.

(6)(i) If a factor under § 300.68(i)(5) is used in eliminating an alternative or in scaling down the extent of remedy, it must be explained and documented in the appropriate decision document.

(ii) Other Federal criteria, advisories, and guidance and State standards will be considered and may be used by the lead agency in developing remedial alternatives. If the lead agency does not use or uses and adjusts any other standards, the decision documents must explain and document the reasons. The rationale for not using such other standards may include one or more of the circumstances enumerated in § 300.68(i)(5).

(j) *Appropriate actions.* The following remedial actions are, as a general rule, appropriate in the following situations; however, this list does not limit the lead agency from selecting any other actions deemed necessary in response to any situation:

(1) In response to contaminated ground water—elimination or containment of the contamination to prevent further contamination, treatment and/or removal of such ground water to reduce or eliminate the contamination, physical containment of such ground water to reduce or eliminate potential exposure to such contamination, and/or restrictions on use of the ground water to eliminate potential exposure to the contamination;

(2) In response to contaminated surface water—elimination or containment of the contamination to prevent further pollution, and/or treatment of the contaminated water to reduce or eliminate its hazard potential;

(3) In response to contaminated soil or waste—actions to remove, treat, or contain the soil or waste to reduce or eliminate the potential for hazardous substances or pollutants or contaminants to contaminate other media (ground water, surface water, or air) and to reduce or eliminate the potential for such substances to be inhaled, absorbed, or ingested;

(4) In response to the threat of direct contact with hazardous substances or pollutants or contaminants—any of the actions listed in § 300.65(c) to reduce the likelihood of such contact or the severity of any effects from such contract.

(k) *Remedial site sampling.* (1) Sampling performed pursuant to Fund-financed remedial action must have a written quality assurance/site sampling plan. Sampling performed pursuant to the written quality assurance/site sampling plan will generally be adequate if the plan includes the following elements:

(i) A description of the objectives of the sampling efforts with regard to both the phase of the sampling and the ultimate use of the data;

(ii) Sufficient specification of sampling protocol and procedures;

(iii) Sufficient sampling to adequately characterize the source of the release, likely transport pathways, and/or potential receptor exposure;

(iv) Specifications of the types, locations, and frequency of samples taken, taking into account the unique properties of the site, including the appropriate hydrological, geological, hydrogeological, physiographical, and meteorological properties of the site; and

(v) Such other elements as may be required by the RPM and the appropriate EPA Regional or Headquarters quality assurance office on a site-by-site basis.

(2) In Fund-financed actions or actions under CERCLA section 106, the quality assurance/site sampling plan must be reviewed and approved by the Remedial Project Manager with a coordination signature from the Qualify Assurance Officer.

(l) *Response actions pursuant to sections 106 and 111(a)(2) of CERCLA/consistency with NCP.* When a person other than the lead agency takes the response action, the lead agency shall evaluate and approve the adequacy of proposals submitted when the response action: is taken pursuant to section 106 of CERCLA; or involves preauthorization pursuant to section 111(a)(2) of CERCLA or § 300.25 of this Plan. When evaluating these proposed response actions and for the purpose of determining consistency with this Plan for cost recovery under section 107 of CERCLA, the remedial investigation or its equivalent must address the factors outlined in paragraph (e) of this section. The full range of alternatives outlined in paragraph (f) of this section must be developed unless a specific, more limited range of alternatives has been negotiated with the lead agency pursuant to action under section 106 of CERCLA or preauthorization.

§ 300.69 Documentation and cost recovery.

(a) During all phases of response, documentation shall be collected and maintained to support all actions taken under this Plan, and to form the basis for cost recovery. In general, documentation shall be sufficient to provide the source and circumstances of the condition, the identity of responsible parties, accurate accounting of Federal or private party costs incurred, and impacts and potential impacts to the public health and welfare and the environment. Where applicable, documentation shall state when the National Response Center received notification of a release of a reportable quantity and when Fund-balancing has been used to limit the Federal response.

(b) The information and reports obtained by the lead agency for Fund-financed response actions shall, as appropriate, be transmitted to the RRT. Copies can then be forwarded to the NRT, members of the RRT, and others as appropriate. In addition, OSCs shall report as required by § 300.40 for all major releases and all Fund-financed removal actions taken.

(c) Information and documentation of actual or potential natural resource damages shall be made available to the trustees of affected natural resources.

(d) Actions undertaken by the participating agencies in response shall be carried out under existing programs and authorities when available. This Plan intends that Federal agencies will make resources available, expend funds, or participate in responses to releases under their existing authority. Interagency agreements may be signed when necessary to ensure that the Federal resources will be available for a timely response to a release. The ultimate decision as to the appropriateness of expending funds rests with the agency that is held accountable for such expenditures.

§ 300.70 Methods of remedying releases.

(a) This section lists methods for remedying releases that may be considered by the lead agency before selecting the response action. This list of methods shall not be considered inclusive of all possible methods of remedying releases.

(b) *Engineering methods for on-site actions*—(1)(i) *Air emissions control.* The control of volatile gaseous compounds shall, as appropriate, address both lateral movements and atmospheric emissions. Before gas migration controls can be properly installed, field measurements to determine gas concentrations, pressures, and soil permeabilities shall, as appropriate, be used to establish optimum design for control. In addition, the types of hazardous substances present, the depth to which they extend, the nature of the gas and the subsurface geology of the release area shall, if possible, be determined. Typical emission control techniques include the following:

(A) Pipe vents;
(B) Trench vents;
(C) Gas barriers;
(D) Gas collection;
(E) Overpacking.

(ii) *Surface water controls.* These are remedial techniques designed to reduce water infiltration and to control runoff at release areas. They also serve to reduce erosion and to stabilize the surface of covered sites. These types of control technologies are usually implemented in conjunction with other types of control and include the following:

(A) Surface seals;
(B) Surface water diversions and collection systems:
(*1*) Dikes and berms;
(*2*) Ditches, diversions, waterways;
(*3*) Chutes and downpipes;
(*4*) Levees;
(*5*) Seepage basins and ditches;
(*6*) Sedimentation basins and ditches; and
(*7*) Terraces and benches;
(C) Grading;
(D) Revegetation.

(iii) *Ground water controls.* Ground water pollution is a particularly serious problem because, once an aquifer has been contaminated, the resource cannot usually be cleaned without the expenditure of great time, effort, and resources. Techniques that can be applied to the problem with varying degrees of success are as follows:

(A) Impermeable barriers:
(*1*) Slurry walls;
(*2*) Grout curtains; and
(*3*) Sheet pilings;
(B) Permeable treatment beds;
(C) Ground water pumping:
(*1*) Water table adjustment; and
(*2*) Plume containment;
(D) Leachate control: Leachate control systems control surface seeps and seepage of leachate to ground water. Leachate collection systems consist of a series of drains which intercept the leachate and channel it to a sump, wetwell, treatment system, or appropriate surface discharge point. Technologies applicable to leachate control include the following:
(*1*) Subsurface drains;
(*2*) Drainage ditches; and
(*3*) Liners.

(iv) *Contaminated water and sewer lines.* Sanitary sewers and municipal water mains located downgradient from hazardous waste disposal sites may become contaminated by infiltration of leachate or polluted ground water through cracks, ruptures, or poorly sealed joints in piping. Technologies applicable to the control of such contamination to water and sewer lines include:

(A) Grouting;
(B) Pipe relining and sleeving; and
(C) Sewer relocation.

(2) *Treatment technologies*—(i) *Gaseous emissions treatment.* Gases from waste disposal sites frequently contain malodorous and toxic substances, and thus require treatment before release to the atmosphere. There are two basic types of gas treatment systems:

(A) Vapor phase adsorption; and

(B) Thermal oxidation.

(ii) *Direct waste treatment methods.* In most cases, these techniques can be considered long-term permanent solutions. Many of these direct treatment methods are not fully developed and the applications and process reliability are not well demonstrated. Use of these techniques for waste treatment may require considerable pilot plant work. Technologies applicable to the direct treatment of wastes are:

(A) Biological methods:

(*1*) Treatment via modified conventional wastewater treatment techniques;

(*2*) Anaerobic, aerated and facultative lagoons; and

(*3*) Supported growth biological reactors.

(B) Chemical methods:

(*1*) Chlorination;

(*2*) Precipitation, flocculation, sedimentation;

(*3*) Neutralization;

(*4*) Equalization; and

(*5*) Chemical oxidation.

(C) Physical methods:

(*1*) Air stripping;

(*2*) Carbon absorption;

(*3*) Ion exchange;

(*4*) Reverse osmosis;

(*5*) Permeable bed treatment;

(*6*) Wet air oxidation; and

(*7*) Incineration.

(iii) *Contaminated soils and sediments.* In some cases where it can be shown to be cost-effective, contaminated sediments and soils will be treated on the site. Technologies available include:

(A) Incineration;

(B) Wet air oxidation;

(C) Solidification;

(D) Encapsulation; and

(E) On-site treatment:

(*1*) Solution mining (soil washing or soil flushing);

(*2*) Neutralization/detoxification;

(*3*) Microbiological degradation.

(c) *Off-site transport for storage, treatment, destruction or secure disposition*—(1) *General.* Off-site transport or storage, treatment, destruction, or secure disposition off-site may be provided in cases where EPA determines that such actions:

(i) Are more cost-effective than other forms of remedial actions;

(ii) Will create new capacity to manage, in compliance with Subtitle C of the Solid Waste Disposal Act, hazardous substances in addition to those located at the affected facility; or

(iii) Are necessary to protect public health or welfare or the environment from a present or potential risk which may be created by further exposure to the continued presence of such substances or materials.

(2) Contaminated soils and sediments may be removed from the site. Technologies used to remove contaminated sediments from soils include:

(i) Excavation;

(ii) Hydraulic dredging;

(iii) Mechanical dredging.

(d) Provision of alternative water supplies can be provided in several ways:

(1) Provision of individual treatment units;

(2) Provision of water distribution system;

(3) Provision of new wells in a new location or deeper wells;

(4) Provision of cisterns;

(5) Provision of bottled or treated water;

(6) Provision of upgraged treatment for existing distribution systems.

(e) *Relocation.* Permanent relocation of residents, businesses, and community facilities may be provided where it is determined that human health is in danger and that, alone or in combination with other measures, relocation would be cost-effective and environmentally preferable to other remedial response. Temporary relocation may also be taken in appropriate circumstances.

§ 300.71 Other party responses.

(a)(1) Any person may undertake a response action to reduce or eliminate the release or threat of release of hazardous substances, or pollutants or contaminants. Section 107 of CERCLA authorizes persons to recover certain response costs consistent with this Plan from responsible parties.

(2) For purposes of cost recovery under section 107 of CERCLA, except for actions taken pursuant to section 106 of CERCLA or pursuant to preauthorization under § 300.25 of this Plan, a response action will be consistent with the NCP (or for a State or Federal government response, not inconsistent with the NCP), if the person taking the response action:

(i) Where the action is a removal action, acts in circumstances warranting removal and implements removal action consistent with § 300.65.

(ii) Where the action is a remedial action:

(A) Provides for appropriate site investigation and analysis of remedial alternatives as required under §300.68;

(B) Complies with the provisions of paragraphs (e) through (i) of § 300.68;

(C) Selects a cost-effective response; and

(D) Provides an opportunity for appropriate public comment concerning the selection of a remedial action consistent with paragraph (d) of § 300.67 unless compliance with the legally applicable or relevant and appropriate State and local requirements identified under paragraph (a)(4) of this section provides a substantially equivalent opportunity for public involvement in the choice of remedy.

(3) For the purpose of consistency with §§ 300.65 and 300.68 of this Plan, except for response actions taken pursuant to section 106 of CERCLA or response actions for which reimbursement from the Fund will be sought, any action to be taken by the "lead agency" in § 300.65 or § 300.68 may be taken by the person carrying out the response.

(4) Persons performing response actions that are neither Fund-financed nor pursuant to action under section 106 of CERCLA shall comply with all otherwise legally applicable or relevant and appropriate Federal, State, and local requirements, including permit requirements.

(b) *Organizations.* Pursuant to CERCLA section 105(9), organizations may assist or conduct site response by:

(1) Organizing responsible parties;

(2) Initiating negotiation or other cooperative efforts;

(3) Apportioning costs among liable parties;

(4) Recommending appropriate settlements to the lead agency;

(5) Conducting the RI/FS in accordance with this Plan;

(6) Evaluating and recommending appropriate remedies to the lead agency;

(7) Implementing and overseeing response actions;

(8) Obtaining assurances for continued site maintenance from responsible parties; and/or

(9) Recommending sites for deletion after completion of all appropriate response action.

(c) *Certification.* Organizations may be certified to conduct site response actions. Certification is not necessary for, but may facilitate, Fund preauthorization under § 300.25(d) and lead agency evaluation of the adequacy of proposed response actions.

(1) An organization may request certification by submitting a written request to the Administrator or his designee establishing that the requesting organization has engineering, scientific, or other technical expertise necessary to assist or conduct site response by carrying out any or all of the functions listed in paragraph (b) of this section.

(2) For each specific release being addressed, the certified organization must:

(i) Meet the requirements of § 300.25(d) and 40 CFR Part 307 if requesting preauthorization; and

(ii) Have established procedures to recuse members of the organization that may have a conflict of interest with a party potentially responsible for the release.

(3) The Administrator will respond to a request for certification within 180 days of receipt of the request. The Administrator may grant certification, request further information relating to the requested certification, or deny certification.

(4) Certification is effective for two years from the date of latest certification. If certification is not renewed at that time, it automatically expires.

(5) Certification is not to be construed as approval by the lead agency of response actions undertaken by that organization. Certification does not authorize that organization to act on behalf of, or as an agent for, the lead agency.

(6) Certification may be revoked at the discretion of the Administrator for failure to comply with this Plan or the requirements of CERCLA.

(d) *Releases from liability.* Implementation of response measures by responsible parties, certified organizations, or other persons does not release those parties from liability.

Subpart G—Trustees for Natural Resources

SOURCE: 50 FR 47978, Nov. 20, 1985, unless otherwise noted.

§ 300.72 Designation of Federal trustees.

When natural resources are lost or damaged as a result of a discharge of oil or a release of a hazardous substance, the following officials are designated to act as Federal trustees pursuant to section 111(h)(1) of CERCLA and section 311(f)(5) of the Clean Water Act for purposes of sections 111(h)(1), 111(b), and 107(f) of CERCLA and section 311(f)(5) of the Clean Water Act:

(a)(1) *Natural resource loss.* Damage to resources of any kind located on, over, or under land subject to the management or protection of a Federal land managing agency, other than land or resources in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence.

(2) *Trustee.* The head of the Federal land managing agency, or the head of any other single entity designated by it to act as trustee for a specific resource.

(b)(1) *Natural resource loss.* Damage to fixed or non-fixed resources subject to the management or protection of a Federal agency, other than land or resources in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence.

(2) *Trustee.* The head of the Federal agency authorized to manage or protect these resources by statute, or the head of any other single entity designated by it to act as trustee for a specific resource.

(c)(1) *Natural resource loss.* Damage to a resource of any kind subject to the management or protection of a Federal agency and lying in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence, and upland areas serving as habitat for marine mammals and other species subject to the protective jurisdiction of NOAA.

(2) *Trustee.* The Secretary of Commerce or the head of any other single Federal entity designated by it to act as trustee for a specific resource; provided, however, that where resources are subject to the statutory authorities and jurisdictions of the Secretaries of the Departments of Commerce or the Interior, they shall act as co-trustees.

(d)(1) *Natural resource loss.* Damages to natural resources protected by treaty (or other authority pertaining to Native American tribes) or located on lands held by the United States in trust for Native American communities or individuals.

(2) *Trustee.* The Secretary of the Department of the Interior, or the head of any other single Federal entity designated by it to act as trustee for specific resources.

§ 300.73 State trustees.

States may act as trustee for natural resources within the boundary of a State or belonging to, managed by, controlled by, or appertaining to such State as provided by CERCLA.

§ 300.74 Responsibilities of trustees.

(a) The Federal trustees for natural resources shall be responsible for assessing damages to the resource in accordance with regulations promulgated under section 301(c) of CERCLA, seeking recovery for the costs of assessment and for the losses from the person responsible or from the Fund, and devising and carrying out a plan for restoration, rehabilitation, or replacement or acquisition of equivalent natural resources pursuant to CERCLA.

(b) The trustee may, upon notification, take the following actions as appropriate:

(1) Request that the lead agency issue an administrative order or pursue judicial relief against parties responsible for the release, as authorized by CERCLA section 106;

(2) Request that the lead agency remove or arrange for the removal or provide for remedial action with respect to any hazardous substance from a contaminated medium, as authorized by CERCLA section 104;

(3) Initiate actions against responsible parties under CERCLA section 107(a); or

(4) Pursue a claim against the Fund for injury, destruction, or loss of a natural resource, as authorized by CERCLA section 111. (When this option is selected, a plan for restoration, rehabilitation, or replacement or acquisition of equivalent natural resources must be adopted pursuant to section 111(i) of CERCLA.)

(c) Where there are multiple trustees, because of co-existing or contiguous natural resources or concurrent jurisdictions, they shall coordinate and cooperate in carrying out these responsibilities.

Subpart H—Use of Dispersants and Other Chemicals

SOURCE: 49 FR 29197, July 18, 1984, unless otherwise noted.

§ 300.81 General.

(a) Section 311(c)(2)(G) of the Clean Water Act requires that EPA prepare a schedule of dispersants and other chemicals, if any, that may be used in carrying out the plan. This subpart makes provisions for such a schedule.

(b) This subpart applies to the navigable waters of the United States and adjoining shorelines, the waters of the contiguous zone, and the high seas beyond the contiguous zone in connection with activities under the Outer Continental Shelf Lands Act, activities under the Deep Water Port Act of 1974, or activities that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976).

(c) This subpart applies to the use of any chemical agents or other additives as hereinafter defined that may be used to remove or control oil discharges.

§ 300.82 Definitions.

For the purposes of this subpart:

(a) *Chemical agents*, in general, are those elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, concentrate, congeal, entrap, fix, make the pollutant mass more rigid or viscous, or otherwise facilitate the mitigation of deleterious effects or removal of the pollutant from the water.

(b) *Dispersants* are those chemical agents that emulsify, disperse, or solubilize oil into the water column or promote the surface spreading of oil slicks to facilitate dispersal of the oil into the water column.

(c) *Surface collecting agents* are those chemical agents that form a surface film to control the layer thickness of oil.

(d) *Biological additives* are microbiological cultures, enzymes, or nutrient additives that are deliberately introduced into an oil discharge for the specific purpose of encouraging biodegradation to mitigate the effects of the discharge.

(e) *Burning agents* are those additives that, through physical or chemical means, improve the combustibility of the materials to which they are applied.

(f) *Sinking agents* are those additives applied to oil discharges to sink floating pollutants below the water surface.

(g) *Navigable water* means the water of the United States, including the territorial seas. "Territorial seas" means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of three miles.

§ 300.83 NCP Product Schedule.

(a) *Oil discharges.* (1) EPA shall maintain a schedule of dispersants and other chemical or biological products that may be authorized for use on oil discharges in accordance with the procedures set forth in § 300.84 of this part. This schedule, called the NCP Product Schedule, may be obtained from the Emergency Response Division, U.S. Environmental Protection Agency, Washington, DC 20460. Phone (202) 382-2196.

(2) Products may be added to the NCP Product Schedule by the process specified in § 300.86.

(b) *Hazardous substance releases.* [Reserved]

§ 300.84 Authorization of use.

(a) The OSC, with the concurrence of the EPA representative to the RRT and the concurrence of the States with jurisdiction over the navigable waters polluted by the oil discharge, may authorize the use of dispersants, surface collecting agents, and biological additives on the oil discharge, provided that the dispersants, surface collecting agents, or additives are on the NCP Product Schedule. The OSC shall consult with other appropriate Federal agencies as practicable when considering the use of such products.

(b) The OSC, with the concurrence of the EPA representative to the RRT and the concurrence of the States with jurisdiction over the navigable waters polluted by the oil discharge, may authorize the use of burning agents on a case-by-case basis. The OSC shall consult with other appropriate Federal agencies as practicable when considering the use of such products.

(c) The OSC may authorize the use of any dispersant, surface collecting agent, other chemical agent, burning agent, or biological additive (including products not on the NCP Product Schedule) without obtaining the concurrence of the EPA representative to the RRT or the State with jurisdiction over the navigable waters polluted by the oil discharge, when, in the judgment of the OSC, the use of the product is necessary to prevent or substantially reduce a hazard to human life. The OSC is to inform the EPA RRT representative and the affected States of the use of a product as soon as possible and, pursuant to the provisions in paragraph (a) of this section, obtain their concurrence for its continued use once the threat to human life has subsided.

(d) Sinking agents shall not be authorized for application to oil discharges.

(e) RRTs shall, as appropriate, consider, as part of their planning activities, the appropriateness of using the dispersants, surface collecting agents, or biological additives listed on the NCP Product Schedule, and the appropriateness of using burning agents. Regional contingency plans shall, as appropriate, address the use of such products in specific contexts. If the RRT and the States with jurisdiction over the waters of the area to which a plan applies approve in advance the use of certain products as described in the plan, the OSC may authorize the use of the products without obtaining the concurrence of the EPA representative to the RRT or of the States and without consultation with other appropriate Federal agencies.

[50 FR 47979, Nov. 20, 1985]

§ 300.85 Data requirements.

(a) *Dispersants.* (1) Name, brand, or trademark, if any, under which the dispersant is sold.

(2) Name, address, and telephone number of the manufacturer, importer, or vendor.

(3) Name, address, and telephone number of primary distributors or sales outlets.

(4) Special handling and worker precautions for storage and field application. Maximum and minimum storage temperatures, to include optimum ranges as well as temperatures that will cause phase separations, chemical

changes, or other alterations to the effectiveness of the product.

(5) Shelf life.

(6) Recommended application procedures, concentrations, and conditions for use depending upon water salinity, water temperature, types and ages of the pollutants, and any other application restrictions.

(7) Dispersant Toxicity—Use standard toxicity test methods described in Appendix C.

(8) Effectiveness—Use standard effectiveness test methods described in Appendix C. Manufacturers are also encouraged to provide data on product performance under conditions other than those captured by these tests.

(9) Flash Point—Select appropriate method from the following: ASTM—D 56-77; ASTM—D 92-78; ASTM—D 93-77; ASTM—D 1310-72; ASTM—D 3278-78.[1]

(10) Pour Point—Use ASTM—D 97-66.[1]

(11) Viscosity—Use ASTM—D 445-74.[1]

(12) Specific Gravity—Use ASTM—D 1298-67.[1]

(13) pH—Use ASTM—D 1293-78.[1]

(14) Dispersing Agent Components. Itemize by chemical name and percentage by weight each component of the total formulation. The percentages will include maximum, minimum, and average weights in order to reflect quality control variations in manufacture or formulation. Identify at least the following major components: surface active agents; solvents; additives.

(15) Heavy Metals, Cyanide, and Chlorinated Hydrocarbons. Using standard test procedures, state the concentrations or upper limits of the following materials:

(i) Arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc, plus any other metals that may be reasonably expected to be in the sample. Atomic absorption methods should be used and the detailed analytical methods and sample preparation shall be fully described.

(ii) Cyanide. Standard colorimetric procedures should be used.

(iii) Chlorinated hydrocarbons. Gas chromatography should be used and the detailed analytical methods and sample preparation shall be fully described.

(16) The technical product data submission shall include the identity of the laboratory that performed the required tests, the qualifications of the laboratory staff (including professional biographical information for individuals responsible for any tests), and laboratory experience with similar tests. Laboratories performing toxicity tests for dispersant toxicity must demonstrate previous toxicity test experience in order for their results to be accepted. It is the responsibility of the submitter to select competent anaytical laboratories based on the guidelines contained herein. EPA reserves the right to refuse to accept a submission of technical product data because of lack of qualification of the analytical laboratory, significant variance between submitted data and any laboratory confirmation performed by EPA, or other circumstances that would result in inadequate or inaccurate information on the dispersing agent.

(b) *Surface collecting agents.* (1) Name, brand, or trademark, if any, under which the dispersant is sold.

(2) Name, address, and telephone number of the manufacturer, importer, or vendor.

(3) Name, address, and telephone number of primary distributors or sales outlets.

(4) Special handling and worker precautions for storage and field application. Maximum and minimum storage temperatures, to include optimum ranges as well as temperatures that will cause phase separations, chemical changes, or other alterations to the effectiveness of the product.

(5) Shelf life.

(6) Recommended application procedures, concentrations, and conditions for use depending upon water salinity, water temperature, types and ages of the pollutants, and any other application restrictions.

(7) Toxicity—Use standard toxicity test methods described in Appendix C.

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[1] *1981 Annual Book of ASTM Standards.* American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

(8) Flash Point—Select appropriate method from the following: ASTM—D 56-77; ASTM—D 92-78; ASTM—D 93-77; ASTM—D 1310-72; ASTM—D 3278-78.[1]

(9) Pour Point—Use ASTM—D 97-66.[1]

(10) Viscosity—Use ASTM—D 445-74.[1]

(11) Specific Gravity—Use ASTM—D 1298-67.[1]

(12) pH—Use ASTM—D 1298-78.[1]

(13) Test to Distinguish Between Surface Collection Agents and Other Chemical Agents.

(i) Method Summary—Five (5) milliliters of the chemical under test are mixed with ninety-five (95) milliliters of distilled water and allowed to stand undisturbed for one hour. Then the volume of the upper phase is determined to the nearest one (1) milliliter.

(ii) Apparatus.

(A) Mixing Cylinder: 100 milliliter subdivisions and fitted with a glass stopper.

(B) Pipettes: Volumetric pipette, 5.0 milliliter.

(C) Timers.

(iii) Procedure—Add 95 milliliters of distilled water at 22 °C+3 °C to a 100 milliliter mixing cylinder. To the surface of the water in the mixing cylinder, add 5.0 milliliters of the chemical under test. Insert the stopper and invert the cylinder five (5) times in 10 seconds. Set upright for one (1) hour at 22 °C+3 °C and then measure the chemical layer at the surface of the water. The major portions of the chemical added (75 percent) should be at the water surface as a separate and easily distinguished layer.

(14) Surface Collecting Agent Components. Itemize by chemical name and percentage by weight each component of the total formulation. The percentages should include maximum, minimum, and average weights in order to reflect quality control variations in manufacture or formulation. Identify at least the following major components: surface active agents; solvents; additives.

(15) Heavy Metals, Cyanide, and Chlorinated Hydrocarbons. Follow specifications in § 300.85(a)(15).

(16) Analytical Laboratory Requirements for Technical Product Data. Follow specifications in § 300.85(a)(16).

(c) *Biological additives.* (1) Name, brand, or trademark, if any, under which the dispersant is sold.

(2) Name, address, and telephone number of the manufacturer, importer, or vendor.

(3) Name, address, and telephone number of primary distributors or sales outlets.

(4) Special handling and worker precautions for storage and field application. Maximum and minimum storage temperatures.

(5) Shelf life.

(6) Recommended application procedures, concentrations, and conditions for use depending upon water salinity, water temperature, types and ages of the pollutants, and any other application restrictions.

(7) Statements and supporting data on the expected effectiveness of the additive, including degradation rates, the test conditions, and data on effectiveness.

(8) For microbiological cultures furnish the following information:

(i) Listing of all microorganisms by species.

(ii) Percentage of each species in the composition of the additive.

(iii) Optimum pH, temperature, and salinity ranges for use of the additive, and maximum and minimum pH, temperature, and salinity levels above or below which the effectiveness of the additive is reduced to half its optimum capacity.

(iv) Special nutrient requirements, if any.

(v) Separate listing of the following, and test methods for such determinations: Salmonella, fecal coliform, Shigella, Staphylococcus Coagulase positive, and Beta Hemolytic Streptococci.

(9) For enzyme additives furnish the following information:

(i) Enzyme name(s).

(ii) International Union of Biochemistry (I.U.B.) number(s).

(iii) Source of the enzyme.

(iv) Units.

(v) Specific activity.

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[1] *1981 Annual Book of ASTM Standards.* American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.

(vi) Optimum pH, temperature, and salinity ranges for use of the additive, and maximum and minimum pH, temperature, and salinity levels above or below which the effectiveness of the additive is reduced to half its optimum capacity.

(vii) Enzyme shelf life.

(viii) Enzyme optimum storage conditions.

(10) Laboratory Requirements for Technical Product Data. Follow specifications in § 300.85(a)(16).

(d) *Burning agents.* EPA does not require technical product data submissions for burning agents and does not include burning agents on the NCP Product Schedule.

§ 300.86 Addition of products to schedule.

(a) To add a dispersant, surface collecting agent, or biological additive to the NCP Product Schedule, the technical product data specified in § 300.85 must be submitted to the Emergency Response Division, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. If EPA determines that the data submitted meet the relevant requirements, EPA will add the product to the schedule.

(b) EPA will inform the submitter in writing, within 60 days of the receipt of technical product data, of its decision on adding the product to the schedule.

(c) The submitter may assert that certain information in technical product data submissions is confidential business information. EPA will handle such claims pursuant to the provisions in 40 CFR Part 2, Subpart B. Such information must be submitted separately from non-confidential information, clearly identified, and clearly marked "Confidential Business Information." If the submitter fails to make such a claim at the time of submittal, EPA may make the information available to the public without further notice.

(d) The submitter must notify EPA of any changes in the composition or formulation of the dispersant, surface collecting agent, or biological additive. On the basis of this data, EPA may require retesting of the product if the change is likely to affect the effectiveness or toxicity of the product.

(e) The listing of a product on the NCP Product Schedule does not constitute approval of the product. To avoid possible misinterpretation or misrepresentation, any label, advertisement, or technical literature that refers to the placement of the product on the NCP schedule must either reproduce in its entirety EPA's written statement, referred to in Subsection (b), that the product has been listed on the schedule, or include the following disclaimer, which must be conspicuous and must be fully reproduced as follows:

DISCLAIMER

[PRODUCT NAME] is on the U.S. Environmental Protection Agency's NCP Product Schedule. This listing does *NOT* mean that EPA approves, recommends, licenses, certifies, or authorizes the use of [product name] on an oil discharge. This listing means *only* that data have been submitted to EPA as required by Subpart H of the National Contingency Plan, § 300.85.

Failure to comply with these restrictions or any other improper attempt to demonstrate EPA approval of the product shall constitute grounds for removing the product from the NCP Product Schedule.

APPENDIX A TO PART 300—UNCONTROLLED HAZARDOUS WASTE SITE RANKING SYSTEM; A USERS MANUAL

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1.0 Introduction

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (Pub. L. 96-510) requires the President to identify the 400 facilities in the nation warranting the highest priority for remedial action. In order to set the priorities, CERCLA requires that criteria be established based on relative risk or danger, taking into account the population at risk; the hazardous potential of the substances at a facility; the potential for contamination of drinking water supplies, for direct human contact, and for destruction of sensitive ecosystems; and other appropriate factors.

This document describes the Hazard Ranking System (HRS) to be used in evaluating the relative potential of uncontrolled hazardous substance facilities to cause health or safety problems, or ecological or environmental damage. Detailed instructions for using the HRS are given in the following sections. Uniform application of the ranking system in each State will permit EPA to identify those releases of hazardous substances that pose the greatest hazard to humans or the environment. However, the HRS by itself cannot establish priorities for the allocation of funds for remedial action. The HRS is a means for applying uniform technical judgment regarding the potential hazards presented by a facility relative to other facilities. It does not address the feasibility, desirability, or degree of cleanup required. Neither does it deal with the readiness or ability of a State to carry out such remedial action as may be indicated, or to meet other conditions prescribed in CERCLA.

The HRS assigns three scores to a hazardous facility:

- S_M reflects the potential for harm to humans or the environment from migration of a hazardous substance away from the facility by routes involving ground water, surface water, or air. It is a composite of separate scores for each of the three routes.
- S_{FE} reflects the potential for harm from substances that can explode or cause fires.
- S_{DC} reflects the potential for harm from direct contact with hazardous substances at the facility (i.e., no migration need be involved).

The score for each hazard mode (migration, fire and explosion and direct contact) or route is obtained by considering a set of factors that characterize the potential of the facility to cause harm (Table 1). Each factor is assigned a numerical value (on a scale of 0 to 3, 5 or 8) according to prescribed guidelines. This value is then multiplied by a weighting factor yielding the factor score. The factor scores are then combined: Scores within a factor category are added; then the total scores for each factor category are multiplied together to develop a score for ground water, surface water, air, fire and explosion, and direct contact.

TABLE 1

COMPREHENSIVE LIST TO RATING FACTORS

HAZARD MODE	FACTOR CATEGORY	FACTORS		
		GROUND WATER ROUTE	SURFACE WATER ROUTE	AIR ROUTE
Migration	Route Characteristics	• Depth to Aquifer of Concern • Net Precipitation • Permeability of Unsaturated Zone • Physical State	• Facility Slope and Intervening Terrain • One-Year 24-Hour Rainfall • Distance to Nearest Surface Water • Physical State	
	Containment	• Containment	• Containment	
	Waste Characteristics	• Toxicity/Persistence • Hazardous Waste Quantity	• Toxicity/Persistence • Hazardous Waste Quantity	• Reactivity/Incompatibility • Toxicity • Hazardous Waste Quantity
	Targets	• Ground Water Use • Distance to Nearest Well/ Population Served	• Surface Water Use • Distance to Sensitive Environment • Population Served/Distance to Water Intake Downstream	• Land Use • Population Within 4-Mile Radius • Distance to Sensitive Environment
Fire and Explosion	Containment	• Containment		
	Waste Characteristics	• Direct Evidence • Ignitability • Reactivity • Incompatibility • Hazardous Waste Quantity		
	Targets	• Distance to Nearest Population • Distance to Nearest Building • Distance to Nearest Sensitive Environment • Land Use • Population Within 2-Mile Radius • Number of Buildings Within 2-Mile Radius		
Direct Contact	Observed Incident	• Observed Incident		
	Accessibility	• Accessibility of Hazardous Substances		
	Containment	• Containment		
	Toxicity	• Toxicity		
	Targets	• Population Within 1-Mile Radius • Distance to Critical Habitat		

In computing S_{FE} or S_{DC}, or an individual migration route score, the product of its factor category scores is divided by the maximum possible score, and the resulting ratio is multiplied by 100. The last step puts all scores on a scale of 0 to 100.

S_M is a composite of the scores for the three possible migration routes:

$$S_M = \frac{1}{1.73}\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$$

where:

S_{gw} = ground water route score

S_{sw} = surface water route score

S_a = air route score

The effect of this means of combining the route scores is to emphasize the primary (highest scoring) route in aggregating route scores while giving some additional consideration to the secondary or tertiary routes if they score high. The factor 1/1.73 is used simply for the purpose of reducing S_M scores to a 100-point scale.

The HRS does not quantify the probability of harm from a facility or the magnitude of the harm that could result, although the factors have been selected in order to approximate both those elements of risk. It is a procedure for ranking facilities in terms of the potential threat they pose by describing:

- The manner in which the hazardous substances are contained,
- The route by which they would be released,
- The characteristics and amount of the harmful substances, and
- The likely targets.

The multiplicative combination of factor category scores is an approximation of the more rigorous approach in which one would express the hazard posed by a facility as the product of the probability of a harmful occurrence and the magnitude of the potential damage.

The ranking of facilities nationally for remedial action will be based primarily on S_M. S_{FE} and S_{DC} may be used to identify facilities requiring emergency attention.

2.0 Using the Hazard Ranking System—General Considerations

Use of the HRS requires considerable information about the facility, its surroundings, the hazardous substances present, and the geological character of the area down to the aquifers that may be at risk. Figure 1 illustrates a format for recording general information regarding the facility being evaluated. It can also serve as a cover sheet for the work sheets used in the evaluation.

Facility name: ______________________________

Location: ______________________________

EPA Region: ______________________________

Person(s) in charge of the facility: ______________________________

____

____

Name of Reviewer: ____________________ Date: ____________________

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

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Scores: S_M = (S_{gw} = S_{sw} = S_a =)

S_{FE} =

S_{DC} =

FIGURE 1
HRS COVER SHEET

Where there are no data for a factor, it should be assigned a value of zero. However, if a factor with no data is the only factor in a category (e.g., containment), then the factor is given a score of 1. If data are lacking for more than one factor in connection with the evaluation of either S_{gw}, S_{sw}, S_a, S_{FE}, or S_{DC}, that route score is set at zero.

The following sections give detailed instructions and guidance for rating a facility. Each section begins with a work sheet designed to conform to the sequence of steps required to perform the rating. Guidance for evaluating each of the factors then follows. Using the guidance provided, attempt to assign a score for each of the three possible migration routes. Bear in mind that if data are missing for more than one factor in connection with the evaluation of a route, then you must set that route score at 0 (i.e., there is no need to assign scores to factors in a route that will be set at 0).

3.0 Ground Water Migration Route

3.1 *Observed Release.* If there is direct evidence of release of a substance of concern from a facility to ground water, enter a score of 45 on line 1 of the work sheet for the ground water route (Figure 2); then you need not evaluate route characteristics and containment factors (lines 2 and 3). Direct evidence of release must be analytical. If a contaminant is measured (regardless of frequency) in ground water or in a well in the vicinity of the facility at a significantly (in terms of demonstrating that a release has occurred, not in terms of potential effects) higher level than the background level, then quantitative evidence exists, and a release has been observed. Qualitative evidence of release (e.g., an oily or otherwise objectionable taste or smell in well water) constitutes direct evidence only if it can be confirmed that it results from a release at the facility in question. If a release has been observed, proceed to "3.4 *Waste Characteristics*" to continue scoring. If direct evidence is lacking, enter a value of 0 on line 1 and continue the scoring procedure by evaluating *Route Characteristics.*

3.2 *Route Characteristics. Depth to aquifer of concern* is measured vertically from the lowest point of the hazardous substances to the highest seasonal level of the saturated zone of the aquifer of concern (Figure 3). This factor is one indicator of the ease with which a pollutant from the facility could migrate to ground water. Assign a value as follows:

Distance (feet)	Assigned value
>150	0
76 to 150	1
21 to 75	2
0 to 20	3

Net precipitation (precipitation minus evaporation) indicates the potential for leachate generation at the facility. Net seasonal rainfall (seasonal rainfall minus seasonal evaporation) data may be used if available. If net precipitation is not measured in the region in which the facility is located, calculate it by subtracting the mean annual lake evaporation for the region (obtained from Figure 4) from the normal annual precipitation for the region (obtained from Figure 5). EPA Regional Offices will have maps for areas outside the continental U.S. Assign a value as follows:

Net precipitation (inches)	Assigned value
< −10	0
−10 to +5	1
+5 to +15	2
> +15	3

Permeability of unsaturated zone (or intervening geological formations) is an indicator of the speed at which a contaminant could migrate from a facility. Assign a value from Table 2.

TABLE 2—Permeability of Geologic Materials[1]

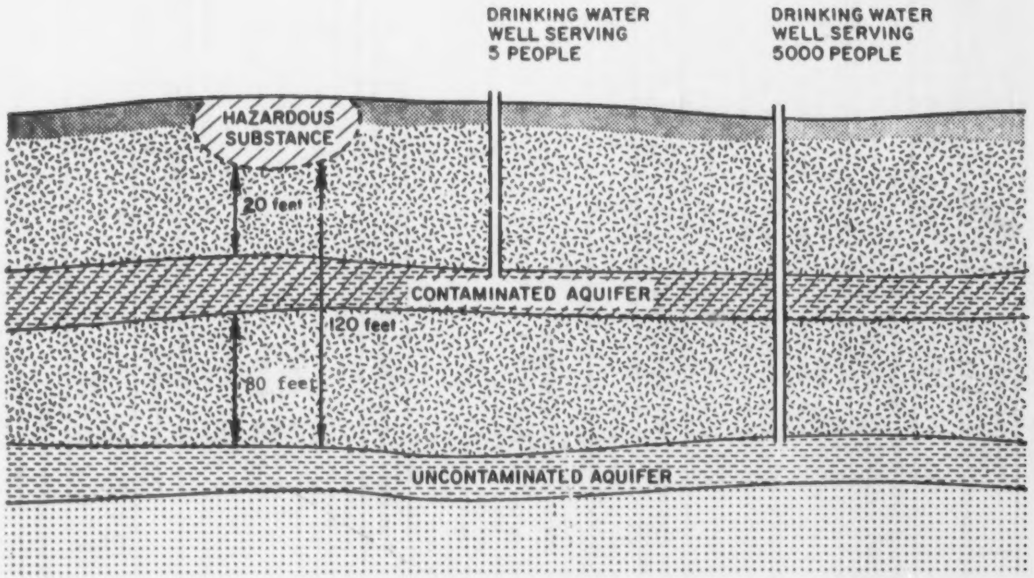
Type of material	Approximate range of hydraulic conductivity	Assigned value
Clay, compact till, shale; unfractured metamorphic and igneous rocks.	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till.	$<10^{-5}>10^{-7}$ cm/sec.	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till.	$<10^{-3}>10^{-5}$ cm/sec.	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite.	$>10^{-3}$ cm/sec	3

[1] Derived from: Davis, S. N., *Porosity and Permeability of Natural Materials in Flow-Through Porous Media,* R.J.M. DeWest ed., Academic Press, New York, 1969; Freeze, R.A. and J.A. Cherry, *Groundwater,* Prentice-Hall, Inc., New York, 1979.

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Release	0 45	1		45	3.1
If observed release is given a score of 45, proceed to line $\boxed{4}$. If observed release is given a score of 0, proceed to line $\boxed{2}$.					
$\boxed{2}$ Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
	Total Route Characteristics Score			15	
$\boxed{3}$ Containment	0 1 2 3	1		3	3.3
$\boxed{4}$ Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1		18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			26	
$\boxed{5}$ Targets					3.5
Ground Water Use	0 1 2 3	3		9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1		40	
	Total Targets Score			49	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$				57,330	
$\boxed{7}$ Divide line $\boxed{6}$ by 57,330 and multiply by 100	S_{gw} =				

FIGURE 2
GROUND WATER ROUTE WORK SHEET


DRINKING WATER
WELL SERVING
5 PEOPLE
DRINKING WATER
WELL SERVING
5000 PEOPLE
HAZARDOUS
SUBSTANCE
20 feet
CONTAMINATED AQUIFER
120 feet
80 feet
UNCONTAMINATED AQUIFER

*Treat target and route characteristics factors consistently. For example, if the upper aquifer is the aquifer of concern, then the "depth to aquifer of concern" is 20 feet and the "population served" is 5 persons. If the lower aquifer is "of concern", the "depth" is 120 feet (assuming no known contamination below the indicated "hazardous substance") and the "population" is 5000 persons.
If the upper aquifer is contaminated and the lower aquifer is "of concern", the "depth" would be 80 feet (vertical distance between hazardous substance and aquifer of concern) and the population would be 5000 persons.

FIGURE 3

Depth to Aquifer of Concern

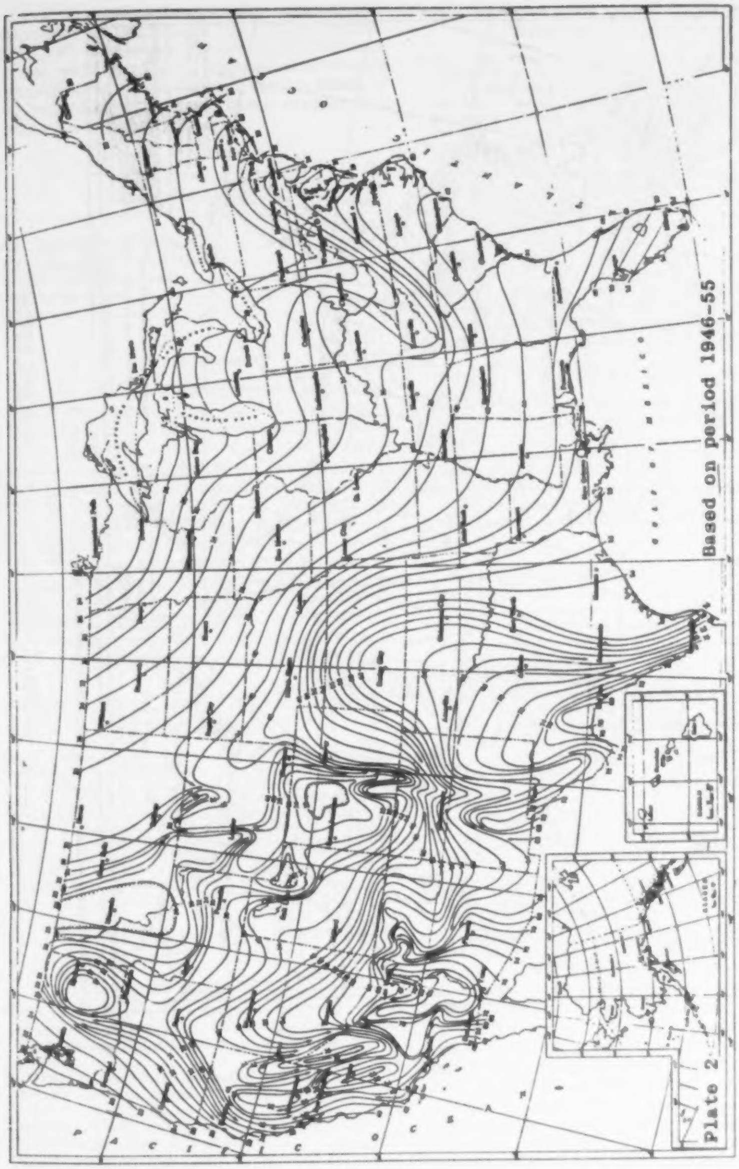
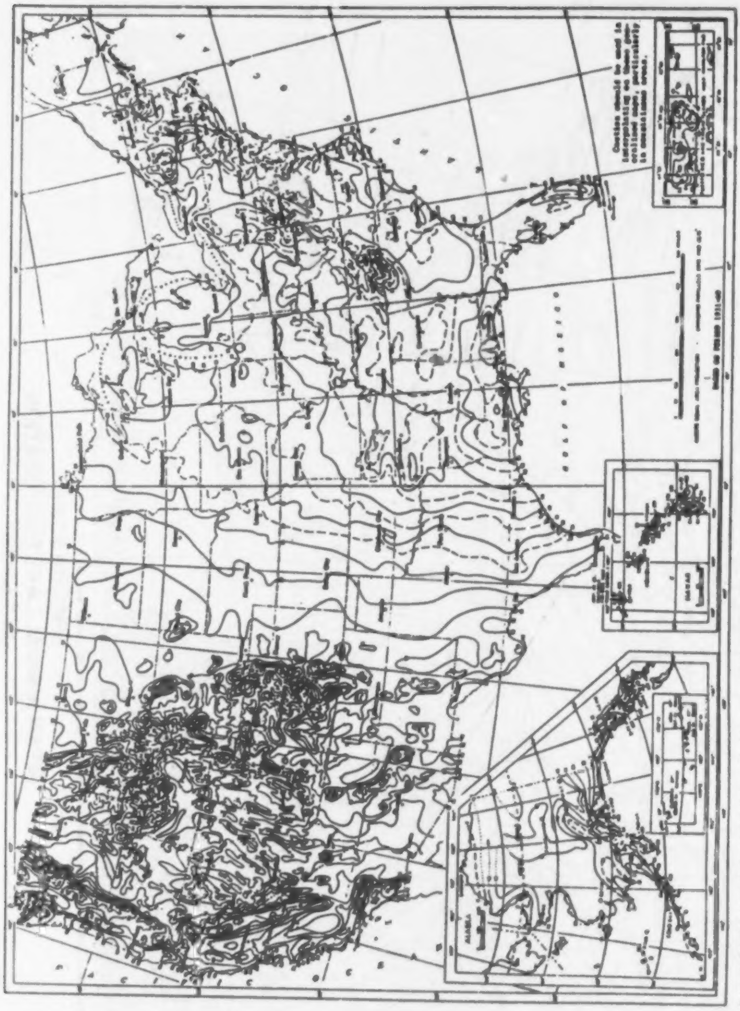


Plate 2
Based on period 1946-55
PACIFIC OCEAN
GULF OF MEXICO

Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979

FIGURE 4
MEAN ANNUAL LAKE EVAPORATION
(IN INCHES)



Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Asheville, N.C., 1979.

FIGURE 5
NORMAL ANNUAL TOTAL PRECIPITATION
(INCHES)

Physical state refers to the state of the hazardous substances at the time of disposal, except that gases generated by the hazardous substances in a disposal area should be considered in rating this factor. Each of the hazardous substances being evaluated is assigned a value as follows:

Physical state	Assigned value
Solid, consolidated or stabilized	0
Solid, unconsolidated or unstabilized	1
Powder or fine material	2
Liquid, sludge or gas	3

3.3 *Containment*

Containment is a measure of the natural or artificial means that have been used to minimize or prevent a contaminant from entering ground water. Examples include liners, leachate collection systems, and sealed containers. In assigning a value to this rating factor (Table 3), consider all ways in which hazardous substances are stored or disposed at the facility. If the facility involves more than one method of storage or disposal, assign the highest from among all applicable values (e.g., if a landfill has a containment value of 1, and, at the same location, a surface impoundment has a value of 2, assign containment a value of 2).

TABLE 3—Containment Value for Ground Water Route

Assign containment a value of 0 if: (1) All the hazardous substances at the facility are underlain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility, using the following guidance.

	Assigned value
A. Surface Impoundment	
Sound run-on diversion structure, essentially non permeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system	0
Essentially non permeable compatible liner with no leachate collection system; or inadequate freeboard	1
Potentially unsound run-on diversion structure; or moderately permeable compatible liner	2
Unsound run-on diversion structure; no liner; or incompatible liner	3
B. Containers	
Containers sealed and in sound condition, adequate liner, and adequate leachate collection system	0
Containers sealed and in sound condition, no liner or moderately permeable liner	1
Containers leaking, moderately permeable liner	2
Containers leaking and no liner or incompatible liner	3
C. Piles	
Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially non permeable liner	0
Piles uncovered, waste unstabilized, moderately permeable liner, and leachate collection system	1
Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system	2
Piles uncovered, waste unstabilized, and no liner	3
D. Landfill	
Essentially non permeable liner, liner compatible with waste, and adequate leachate collection system	0
Essentially non permeable compatible liner, no leachate collection system, and landfill surface precludes ponding	1
Moderately permeable, compatible liner, and landfill surface precludes ponding	2
No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control	3

TABLE 3—Containment Value for Ground Water Route—Continued

Assign containment a value of 0 if: (1) All the hazardous substances at the facility are underlain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility, using the following guidance.

3.4 *Waste Characteristics.* In determining a waste characteristics score, evaluate the most hazardous substances at the facility that could migrate (i.e., if scored, containment is not equal to zero) to ground water. Take the substance with the highest score as representative of the potential hazard due to waste characteristics. Note that the substance that may have been observed in the release category can differ from the substance used in rating waste characteristics. Where the total inventory of substances in a facility is known, only those present in amounts greater than the reportable quantity (see CERCLA section 102 for definition) may be evaluated.

Toxicity and Persistence have been combined in the matrix below because of their important relationship. To determine the overall value for this combined factor, evaluate each factor individually as discussed below. Match the individual values assigned with the values in the matrix for the combined rating factor. Evaluate several of the most hazardous substances at the facility independently and enter only the highest score in the matrix on the work sheet.

Value for toxicity	Value for persistence			
	0	1	2	3
0	0	0	0	0
1	3	6	9	12
2	6	9	12	15
3	9	12	15	18

Persistence of each hazardous substance is evaluated on its biodegradability as follows:

Substance	Assigned value
Easily biodegradable compounds	0
Straight chain hydrocarbons	1
Substituted and other ring compounds	2
Metals, polycyclic compounds and halogenated hydrocarbons	3

More specific information is given in Tables 4 and 5.

TABLE 4—Waste Characteristics Values for Some Common Chemicals

Chemical/Compound	Toxicity[1]	Persistence[2]	Ignitability[3]	Reactivity[3]
Acetaldehyde	3	0	3	2
Acetic Acid	3	0	2	1
Acetone	2	0	3	0
Aldrin	3	3	1	0
Ammonia, Anhydrous	3	0	1	0
Aniline	3	1	2	0
Benzene	3	1	3	0
Carbon Tetrachloride	3	3	0	0
Chlordane	3	3	*0	*0
Chlorobenzene	2	2	3	0
Chloroform	3	3	0	0
Cresol-O	3	1	2	0
Cresol-M&P	3	1	1	0
Cyclohexane	2	2	3	0
Endrin	3	3	1	0
Ethyl Benzene	2	1	3	0
Formaldehyde	3	0	2	0
Formic Acid	3	0	2	0
Hydrochloric Acid	3	0	0	0
Isopropyl Ether	3	1	3	1
Lindane	3	3	1	0
Methane	1	1	3	0
Methyl Ethyl Ketone	2	0	3	0
Methyl Parathion in Xylene Solution	3	Δ0	3	2
Naphthalene	2	1	2	0
Nitric Acid	3	0	0	0
Parathion	3	Δ0	1	2
PCB	3	3	Δ0	Δ0
Petroleum, Kerosene (Fuel Oil No. 1)	3	1	2	0
Phenol	3	1	2	0

TABLE 4—Waste Characteristics Values for Some Common Chemicals—Continued

Chemical/Compound	Toxicity[1]	Persistence[2]	Ignitability[3]	Reactivity[3]
Sulfuric Acid	3	0	0	2
Toluene	2	1	3	0
Trichlorobenzene	2	3	1	0
∝-Trichloroethane	2	2	1	0
Xylene	2	1	3	0

[1] Sax, N. I., *Dangerous Properties of Industrial Materials*, Van Nostrand Rheinmold Co., New York, 4th ed., 1975. The highest rating listed under each chemical is used.

[2] JRB Associates, Inc., *Methodology for Rating the Hazard Potential of Waste Disposal Sites*, May 5, 1980.

[3] National Fire Protection Association, National Fire Codes, Vol 13, No. 49, 1977.

* Professional judgment based on information contained in the U.S. Coast Guard CHRIS Hazardous Chemical Data, 1978.

Δ Professional judgment based on existing literature.

TABLE 5—Persistence (Biodegradability) of Some Organic Compounds*

Value=3 Highly Persistent Compounds

aldrin
benzopyrene
benzothiazole
benzothiophene
benzyl butyl phythalate
bromochlorobenzene
bromoform butanal
bromophenyl phyntyl ether
chlordane
chlorohydroxy benzephenone
bis-chloroisoprophyl ether
m-chloronitrobenzene
DDE
DDT
dibromobenzene
dibutyl phthalate
1,4-dichlorobenzene
dichlorodifluoroethane
dieldrin
diethyl phthalate
di(2-ethylhexyl)phthalate
dihexyl phthalate
di-isobutyl phthalate
dimethyl phthalate
4,6-dinitro-2-aminophenol
dipropyl phythalate
endrin

heptachlor
heptachlor epoxide
1,2,3,4,5,7,7-heptachloronorbornene
hexachlorobenzene
hexachloro-1,3-butadiene
hexachlorocyclohexane
hexachloroethane
methyl benzothiazole
pentachlorobiphenyl
pentachlorophenol
1,1,3,3-tetrachloroacetone
tetrachlorophenyl
thiomethylbenzothiazole
trichlorobenzene
trichlorobiphenyl
trichloroflurornethane
2,4,6-trichlorophenol
triphenyl phosphate
bromodichloromethane
bromoform
carbon tetrachloride
chloroform
chloromochloromethane
dibromodichloroethane
tetrachloroethane
1,1,2-trichloroethane

Value=2 Persistent Compounds

acenaphthylene
atrazine
(diethyl) atrazine
barbital
borneol
bromobenzene
camphor
chlorobenzene
1,2-bis-chloroethoxy ethane
b-chloroethyl methyl ether
chloromethyl ether

cis-2-ethyl-4-methyl-1,3-dioxolane
trans-2-ethyl-4-methyl-1,3-dioxolane
guaiacol
2-hydroxyadiponitrile
isophorone
indene
isoborneol
isopropenyl-r-isopropyl benzene
2-methoxy biphenyl
methyl biphenyl
methyl chloride

TABLE 5—Persistence (Biodegradability) of Some Organic Compounds*—Continued

chloromethyl ethyl ether	methylindene
3-chloropyridine	methylene chloride
di-t-butyl-p-benzoquinone	nitroanisole
dichloroethyl ether	nitrobenzene
dihyrocarvone	1,1,2-trichloroethylene
dimethyl sulfoxide	trimethyl-trioxo-hexahydro-triazine isomer
2,6-dinitrotoluene	
Value=1 Somewhat Persistent Compounds	
acetylene dichloride	limonene
behenic acid, methyl ester	methyl ester of lignoceric acid
benzene	methane
benzene sulfonic acid	2-methyl-5-ethyl-pyridine
butyl benzene	methyl naphthalene
butyl bromide	methyl palmitate
e-caprolactam	methyl phenyl carbinol
carbon-disulfide	methyl stearate
o-cresol	naphthalene
decane	nonane
1,2-dichloroethane	octane
1,2-dimethoxy benzene	octyl chloride
1,3-dimethyl naphthalene	pentane
1,4-dimethyl phenol	phenyl benzoate
dioctyl adipate	phthalic anhydride
n-decane	propylbenzene
ethyl benzene	1-terpineol
2-ethyl-n-hexane	toluene
o-ethyltoluene	vinyl benzene
isodecane	xylene
isoprophyl benzene	
Value=0 Nonpersistent Compounds	
acetaldehyde	methyl benzoate
acetic acid	3-methyl butanol
acetone	methyl ethyl ketone
acetophenone	2-methylpropanol
benzoic acid	octadecane
di-isobutyl carbinol	pentadecane
docosane	pentanol
eicosane	propanol
ethanol	propylamine
ethylamine	tetradecane
hexadecane	n-tridecane
methanol	n-undecane

* JRB Associates, Inc., *Methodology for Rating the Hazard Potential for Waste Disposal Sites*, May 5, 1980.

Toxicity of each hazardous substance being evaluated is given a value using the rating scheme of Sax (Table 6) or the National Fire Protection Association (NFPA) (Table 7) and the following guidance:

Toxicity	Assigned value
Sax level 0 or NFPA level 0	0
Sax level 1 or NFPA level 1	1
Sax level 2 or NFPA level 2	2
Sax level 3 or NFPA level 3 or 4	3

TABLE 6—Sax Toxicity Ratings

0=No Toxicity* (None)**

This designation is given to materials which fall into one of the following categories:

(a) Materials which cause no harm under any conditions of normal use.

(b) Materials which produce toxic effects on humans only under the most unusual conditions or by overwhelming dosage.

1=Slight Toxicity* (Low)**

(a) *Acute local.* Materials which on single exposures lasting seconds, minutes, or hours cause only slight effects on the skin or mucous membranes regardless of the extent of the exposure.

(b) *Acute systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slight effects following single exposures lasting seconds, minutes, or hours, or following ingestion of a single dose regardless of the quantity absorbed or the extent of exposure.

(c) *Chronic local.* Materials which on continuous or repeated exposures extending over periods of days, months, or years cause only slight and usually reversible harm to the skin or mucous membranes. The extent of exposure may be great or small.

(d) *Chronic systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slightly usually reversible effects extending over days, months, or years. The extent of the exposure may be great or small.

In general, those substances classified as having "slight toxicity" produce changes in the human body which are readily reversible and which will disappear following termination of exposure, either with or without medical treatment.

2=Moderate Toxicity* (Mod)**

(a) *Acute local.* Materials which on single exposure lasting seconds, minutes, or hours cause moderate effects on the skin or mucous membranes. These effects may be the result of intense exposure for a matter of seconds or moderate exposure for a matter of hours.

(b) *Acute systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and produce moderate effects following single exposures lasting seconds, minutes, or hours, or following ingestion of a single dose.

TABLE 6—Sax Toxicity Ratings—Continued

(c) *Chronic local.* Materials which on continuous or repeated exposures extending over periods of days, months, or years cause moderate harm to the skin or mucous membranes.

(d) *Chronic systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce moderate effects following continuous or repeated exposures extending over periods of days, months, or years.

Those substances classified as having "moderate toxicity" may produce irreversible as well as reversible changes in the human body. These changes are not of such severity as to threaten life or to produce serious physical impairment.

3=Severe Toxicity* (High)**

(a) *Acute local.* Materials which on single exposure lasting seconds or minutes cause injury to skin or mucous membranes of sufficient severity to threaten life or to cause permanent physical impairment or disfigurement.

(b) *Acute systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which can cause injury of sufficient severity to threaten life following a single exposure lasting seconds, minutes, or hours, or following ingestion of a single dose.

(c) *Chronic local.* Materials which on continuous or repeated exposures extending over periods of days, months, or years can cause injury to skin or mucous membranes of sufficient severity to threaten life or cause permanent impairment, which disfigurement, or irreversible change.

(d) *Chronic systemic.* Materials which can be absorbed into the body by inhalation, ingestion or through the skin and which can cause death or serious physical impairment following continuous or repeated exposures to small amounts extending over periods of days, months, or years.

---

*Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Co., New York, New York, 4th edition, 1975.

**Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Co., New York, New York, 5th edition, 1979.

TABLE 7—NFPA TOXICITY RATINGS*

0	Materials which on exposure under fire conditions would offer no health hazard beyond that of ordinary combustible material.
1	Materials only slightly hazardous to health. It may be desirable to wear self-contained breathing apparatus.
2	Materials hazardous to health, but areas may be entered freely with self-contained breathing apparatus.
3	Materials extremely hazardous to health, but areas may be entered with extreme care. Full protective clothing, including self-contained breathing apparatus, rubber gloves, boots and bands around legs, arms and waist should be provided. No skin surface should be exposed.
4	A few whiffs of the gas or vapor could cause death, or the gas, vapor, or liquid could be fatal on penetrating the fire fighters' normal full protective clothing which is designed for resistance to heat. For most chemicals having a Health 4 rating, the normal full protective clothing available to the average fire department will not provide adequate protection against skin contact with these materials. Only special protective clothing designed to protect against the specific hazard should be worn.

*National Fire Protection Association. *National Fire Codes*, Vol. 13, No. 49, 1977.

Table 4 presents values for some common compounds.

Hazardous waste quantity includes all hazardous substances at a facility (as received) except that with a containment value of 0. Do not include amounts of contaminated soil or water; in such cases, the amount of contaminating hazardous substance may be estimated.

On occasion, it may be necessary to convert data to a common unit to combine them. In such cases, 1 ton=1 cubic yard=4 drums and for the purposes of converting bulk storage, 1 drum=50 gallons. Assign a value as follows:

Tons in cubic yards	Number of drums	Assigned value
0	0	0
1–10	1–40	1
11–62	41–250	2
63–125	251–500	3
126–250	501–1,000	4
251–625	1,001–2,500	5
626–1,250	2,501–5,000	6
1,251–2,500	5,001–10,000	7
>2,500	>10,000	8

3.5 *Targets. Ground water use* indicates the nature of the use made of ground water drawn from the aquifer of concern within 3 miles of the hazardous substance, including the geographical extent of the measurable concentration in the aquifer. Assign a value using the following guidance:

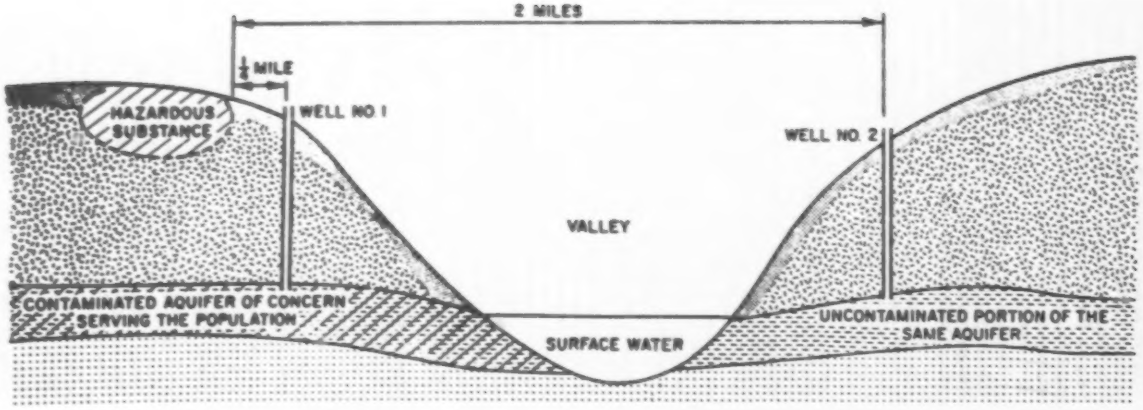
Ground water use	Assigned value
Unusable (e.g., extremely saline aquifer, extremely low yield, etc.)	0
Commercial, industrial or irrigation and another water source presently available; not used, but usable	1
Drinking water with municipal water from alternate unthreatened sources presently available (i.e., minimal hookup requirements); or commercial, industrial or irrigation with no other water source presently available	2
Drinking water; no municipal water from alternate unthreatened sources presently available	3

Distance to nearest well and population served have been combined in the matrix below to better reflect the important relationship between the distance of a population from hazardous substances and the size of the population served by ground water that might be contaminated by those substances. To determine the overall value for this combined factor, score each individually as discussed below. Match the individual values assigned with the values in the matrix for the total score.

Value for population served	Value for distance to nearest well				
	0	1	2	3	4
0	0	0	0	0	0
1	0	4	6	8	10
2	0	8	12	16	20
3	0	12	18	24	30
4	0	16	24	32	35
5	0	20	30	35	40

Distance to nearest well is measured from the hazardous substance (not the facility boundary) to the nearest well that draws water from the aquifer of concern. If the actual distance to the nearest well is unknown, use the distance between the hazardous substance and the nearest occupied building not served by a public water supply (e.g., a farmhouse). If a discontinuity in the aquifer occurs between the hazardous substance and all wells, give this factor a score of 0, except where it can be shown that the contaminant is likely to migrate beyond the discontinuity. Figure 6 illustrates how the distance should be measured. Assign a value using the following guidance:

Distance	Assigned value
>3 miles	0
2 to 3 miles	1
1 to 2 miles	2
2001 feet to 1 mile	3
<2000 feet	4


2 MILES
¼ MILE
HAZARDOUS SUBSTANCE
WELL NO. I
WELL NO. 2
VALLEY
CONTAMINATED AQUIFER OF CONCERN SERVING THE POPULATION
SURFACE WATER
UNCONTAMINATED PORTION OF THE SAME AQUIFER

In the situation depicted above, the distance between the hazardous substance and the nearest well (No. 1) is ¼ mile. If well No. 1 did not exist, the distance to well No. 2 would be immaterial since there is a discontinuity in the aquifer (surface water) between it and the hazardous substance. Under such circumstances, the factor score would be "0". However, if it could be demonstrated that the contaminent had bridged the discontinuity, then the distance to the nearest well would be 2 miles (assuming well No. 1 does not exist).

FIGURE 6

Distance to Nearest Well

Population served by ground water is an indicator of the population at risk, which includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses, or trains. If aerial photography is used, and residents are known to use ground water, assume each dwelling unit has 3.8 residents. Where ground water is used for irrigation, convert to population by assuming 1.5 persons per acre of irrigated land. The well or wells of concern must be within three miles of the hazardous substances, including the area of known aquifer contamination, but the "population served" need not be. Likewise, people within three miles who do not use water from the aquifer of concern are not to be counted. Assign a value as follows:

Population	Assigned value
0	0
1 to 100	1
101 to 1,000	2
1,001 to 3,000	3
3,001 to 10,000	4
>10,000	5

4.0 Surface Water Route

4.1 *Observed Release.* Direct evidence of release to surface water must be quantitative evidence that the facility is releasing contaminants into surface water. Quantitative evidence could be the measurement of levels of contaminants from a facility in surface water, either at the facility or downhill from it, that represents a significant (in terms of demonstrating that a release has occurred, not in terms of potential effects) increase over background levels. If direct evidence of release has been obtained (regardless of frequency), enter a value of 45 on line 1 of the work sheet (Figure 7) and omit the evaluation of the route characteristics and containment factors. If direct evidence of release is lacking, enter a value of 0 on line 1 and continue with the scoring procedure.

4.2. *Route Characteristics. Facility slope and intervening terrain* are indicators of the potential for contaminated runoff or spills at a facility to be transported to surface water. The facility slope is an indicator of the potential for runoff or spills to leave the facility. Intervening terrain refers to the average slope of the shortest path which would be followed by runoff between the facility boundary and the nearest downhill surface water. This rating factor can be assessed using topographic maps. Table 8 shows values assigned to various facility conditions.

One-year 24-hour rainfall (obtained from Figure 8) indicates the potential for area storms to cause surface water contamination as a result of runoff, erosion, or flow over dikes. Assign a value as follows:

Amount of rainfall (inches)	Assigned value
<1.0	0
1.0 to 2.0	1
2.1 to 3.0	2
>3.0	3

TABLE 8—VALUES FOR FACILITY SLOPE AND INTERVENING TERRAIN

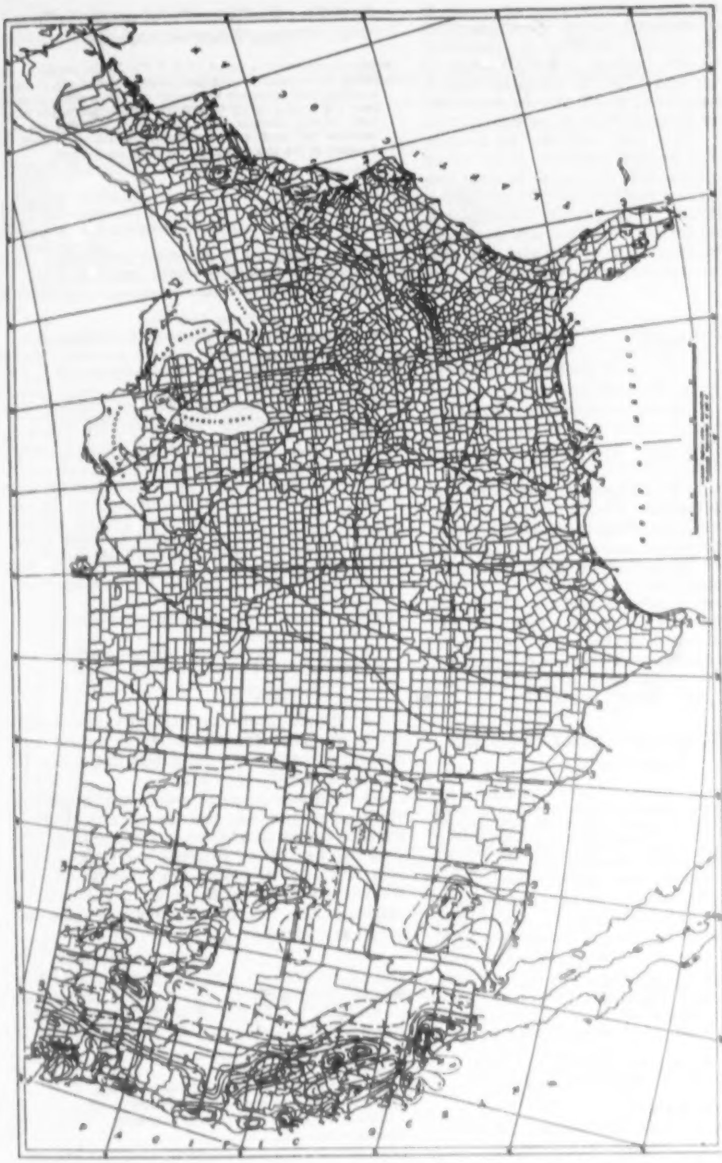
Facility slope	Intervening terrain				
	Terrain average slope				Site in surface water
	<3 pct[1]	3 to 5 pct	5 to 8 pct	> 8 pct	
Facility is closed basin	0	0	0	0	3
Facility has average slope (<3 pct)	0	1	1	2	3
Average slope (3 to 5 pct)	0	1	2	2	3
Average slope (5 to 8 pct)	0	2	2	3	3
Average slope (> 8 pct)	0	2	3	3	3

[1] Terrain average slope <3 pct; or site separated from water body by areas of higher elevation.

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Release	0 45	1		45	4.1
If observed release is given a value of 45, proceed to line $\boxed{4}$. If observed release is given a value of 0, proceed to line $\boxed{2}$.					
$\boxed{2}$ Route Characteristics					4.2
Facility Slope and Intervening Terrain	0 1 2 3	1		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
$\boxed{3}$ Containment	0 1 2 3	1		3	4.3
$\boxed{4}$ Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 18	1		18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				26	
$\boxed{5}$ Targets					4.5
Surface Water Use	0 1 2 3	3		9	
Distance to a Sensitive Environment	0 1 2 3	2		6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1		40	
Total Targets Score				55	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$				64,350	
$\boxed{7}$ Divide line $\boxed{6}$ by 64,350 and multiply by 100	S_{sw} =				

FIGURE 7
SURFACE WATER ROUTE WORK SHEET



Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963

FIGURE 8
1-YEAR 24-HOUR RAINFALL
(INCHES)

Distance to the nearest surface water is the shortest distance from the hazardous substance, (not the facility or property boundary) to the nearest downhill body of surface water (e.g., lake or stream) that is on the course that runoff can be expected to follow and that at least occasionally contains water. Do not include man-made ditches which do not connect with other surface water bodies. In areas having less than 20 inches of normal annual precipitation (see Figure 5), consider intermittent streams. This factor indicates the potential for pollutants flowing overland and into surface water bodies. Assign a value as follows:

Distance	Assigned value
>2 miles	0
1 to 2 miles	1
1000 feet to 1 mile	2
<1000 feet	3

Physical state is assigned a value using the procedures in Section 3.2.

4.3 *Containment. Containment* is a measure of the means that have been taken to minimize the likelihood of a contaminant entering surface water either at the facility or beyond the facility boundary. Examples of containment are diversion structures and the use of sealed containers. If more than one type of containment is used at a facility, evaluate each separately (Table 9) and assign the highest score.

TABLE 9—Containment Values for Surface Water Route

Assign containment a value of 0 if: (1) All the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

	Assigned value
A. Surface Impoundment	
Sound diking or diversion structure, adequate freeboard, and no erosion evident	0
Sound diking or diversion structure, but inadequate freeboard	1
Diking not leaking, but potentially unsound	2
Diking unsound, leaking, or in danger of collapse	3
B. Containers	
Containers sealed, in sound condition, and surrounded by sound diversion or containment system	0
Containers sealed and in sound condition, but not surrounded by sound diversion or containment system	1
Containers leaking and diversion or containment structures potentially unsound	2
Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse	3
C. Waste Piles	
Piles are covered and surrounded by sound diversion or containment system	0
Piles covered, wastes unconsolidated, diversion or containment system not adequate	1
Piles not covered, wastes unconsolidated, and diversion or containment system potentially unsound	2
Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse	3
D. Landfill	
Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material	0
Landfill not adequately covered and diversion system sound	1
Landfill not covered and diversion system potentially unsound	2
Landfill not covered and no diversion system present, or diversion system unsound	3

4.4 *Waste Characteristics.* Evaluate waste characteristics for the surface water route with the procedures described in Section 3.4 for the ground water route.

4.5 *Targets. Surface water use* brings into the rating process the use being made of surface water downstream from the facility. The use or uses of interest are those associated with water taken from surface waters within a distance of three miles from the location of the hazardous substance. Assign a value as follows:

Surface water use (fresh or salt water)	Assigned value
Not currently used	0
Commercial or industrial	1
Irrigation, economically important resources (e.g., shellfish), commercial food preparation, or recreation (e.g., fishing, boating, swimming)	2
Drinking Water	3

Distance to a sensitive environment refers to the distance from the hazardous substance (not the facility boundary) to an area containing an important biological resource or to a fragile natural setting that could suffer an especially severe impact from pollution. Table 10 provides guidance on assigning a value to this rating factor.

TABLE 10—Values for Sensitive Environment (Surface Water)

Assigned value=	0	1	2	3
Distance to Wetlands[1] (5 acre minimum)				
Coastal	>2 miles	1 to 2 miles	½ to 1 mile	<½ mile.
Fresh Water	>1 mile	¼ to 1 mile	100 feet to ¼ mile	<100 feet.
Distance to Critical Habitat (of endangered species)[2]	>1 mile	½ to 1 mile	¼ to ½ mile	<¼ mile.

[1] Wetland is defined by EPA in the Code of Federal Regulations 40 CFR Part 230, Appendix A, 1980.

[2] Endangered species are designated by the U.S. Fish and Wildlife Service.

Population served by surface water with water intake within 3 miles downstream from facility (or 1 mile in static surface water such as a lake) is a rough indicator of the potential hazard exposure of the nearby population served by potentially contaminated surface water. Measure the distance from the probable point of entry to surface water following the surface water (stream miles). The population includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses and trains. The distance is measured from the hazardous substance, including observations in stream or sediment samples, regardless of facility boundaries. Where only residential houses can be counted (e.g., from an aerial photograph), and residents are known to be using surface water, assume 3.8 individuals per dwelling unit. Where surface water is used for irrigation, convert to population by assuming 1.5 persons per acre of land irrigated. Assign a value as follows:

Population	Distance to surface water				
	>3 miles	2-3 miles	1-2 miles	200'-1 mile	0-2,000 feet
0	0	0	0	0	0
1-100	0	4	6	8	10
101-1,000	0	8	12	16	20
1,001-3,000	0	12	18	24	30
3,001-10,000	0	16	24	32	35
>10,000	0	20	30	35	40

5.0 Air Route

5.1 *Observed Release.* The only acceptable evidence of release for the air route is data that show levels of a contaminant at or in the vicinity of the facility that significantly exceed background levels, regardless of the frequency of occurrence. If such evidence exists, enter a value of 45 on line 1 of the work sheet (Figure 9); if not, assign line 1 a 0 value and then $S_a=0$. Record the date, location, and the sampling protocol for monitoring data on the work sheet. Data based on transitory conditions due to facility disturbance by investigative personnel are not acceptable.

Air Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Release	0 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line $\boxed{1}$ is 0, the $S_a = 0$. Enter on line $\boxed{5}$. If line $\boxed{1}$ is 45, then proceed to line $\boxed{2}$.					
$\boxed{2}$ Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
$\boxed{3}$ Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
$\boxed{4}$ Multiply $\boxed{1}$ x $\boxed{2}$ x $\boxed{3}$				35,100	
$\boxed{5}$ Divide line $\boxed{4}$ by 35,100 and multiply by 100		$S_a =$			

FIGURE 9
AIR ROUTE WORK SHEET

5.2 *Waste Characteristics.* The hazardous substance that was observed for scoring the release category may be different from the substance used to score waste characteristics.

Reactivity and incompatibility, measures of the potential for sudden releases of concentrated air pollutants, are evaluated independently, and the highest value for either is recorded on the work sheet.

Reactivity provides a measure of the fire/explosion threat at a facility. Assign a value based on the reactivity classification used by NFPA (see Table 11). Reactivity ratings for a number of common compounds are given in Table 4.

TABLE 11—NFPA Reactivity Ratings

NFPA level	Assigned value
0 Materials which are normally stable even under fire exposure conditions and which are not reactive with water	0
1 Materials which in themselves are normally stable but which may become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently	1
2 Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Includes materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. Also includes those materials which may react violently with water or which may form potentially explosive mixtures with water	2
3 Materials which in themselves are capable of detonation or of explosive decomposition or of explosive reaction but which requires a strong initiating source or which must be heated under confinement before initiation. Includes materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or which react explosively with water without requiring heat or confinement	3
4 Materials which in themselves are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperatures and pressures. Includes materials which are sensitive to mechanical or localized thermal shock	3

Incompatibility provides a measure of the increased hazard when hazardous substances are mixed under uncontrolled conditions, leading to production of heat, pressure, fire, explosion, violent reaction, toxic dusts, mists, fumes or gases, or flammable fumes or gases. Table 12 provides examples of incompatible combinations of materials.

TABLE 12—INCOMPATIBLE MATERIALS

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A	Group 1-B
Acetylene sludge	Acid sludge.
Alkaline caustic liquids	Acid and water.
Alkaline cleaner	Battery acid.
Alkaline corrosive liquids	Chemical cleaners.
Alkaline corrosive battery fluid.	Electrolyte acid.
Caustic wastewater	Etching acid liquid or solvent.
Lime sludge and other corrosive alkalies.	Pickling liquor and other corrosive acids.
Lime wastewater	Spent acid.
Lime and water	Spent mixed acid.
Spent caustic	Spent sulfuric acid.

Potential consequences: Heat generation; violent reaction.

Group 2-A	Group 2-B
Aluminum	Any waste in Group 1-A or 1-B.
Berylium	
Calcium	
Lithium	
Potassium	
Sodium	
Zinc powder	
Other reactive metals and metal hydrides.	

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3-A	Group 3-B
Alcohols	Any concentrated waste in Groups 1-A or 1-B.
Water	Calcium.
	Lithium.
	Metal hydrides.
	Potassium.
	SO_2Cl_2, $SOCl_2$, PCl_3, CH_3, $SiCl_3$.
	Other water-reactive waste.

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4-A	Group 4-B
Alcohols	Concentrated Group 1-A or 1-B wastes.
Aldehydes	Group 2-A wastes.
Halogenated hydrocarbons	
Nitrated hydrocarbons	
Unsaturated hydrocarbons	
Other reactive organic compounds and solvents.	

Potential consequences: Fire, explosion, or violent reaction.

Group 5-A	Group 5-B
Spent cyanide and sulfide solutions.	Group 1-B wastes.

TABLE 12—INCOMPATIBLE MATERIALS—Continued

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6-A	Group 6-B
Chlorates	Acetic acid and other organic acids.
Chlorine	Concentrated mineral acids.
Chlorites	Group 2-A wastes.
Chromic acid	Group 4-A wastes.
Hyphochlorites	Other flammable and combustible wastes.
Nitrates	
Nitric acid, fuming	
Perchlorates	
Permanganates	
Peroxides	
Other strong oxidizers	

Potential consequences: Fire, explosion, or violent reaction.

Source: Hazardous Waste Management Law, Regulations, and Guidelines for the Handling of Hazardous Waste. California Department of Health, Sacramento, California, February 1975.

Additional information can be obtained from *A Method for Determining the Compatibility of Hazardous Wastes,* H. K. Hatayama, *et al.,* EPA-600/2-80-076 (1980). Assign a value using the following guidance:

Incompatibility	Assigned value
No incompatible substances are present	0
Present but do not pose a hazard	1
Present and may pose a future hazard	2
Present and posing an immediate hazard	3

Toxicity should be rated for the most toxic of the substances that can reasonably be expected to be transported away from the facility via the air route. Using the information given in Tables 4, 6, and 7, assign values as follows:

Toxicity	Assigned value
Sax level 0 or NFPA level 0	0
Sax level 1 or NFPA level 1	1
Sax level 2 or NFPA level 2	2
Sax level 3 or NFPA levels 3 or 4	3

Hazardous Waste Quantity

Assign hazardous waste quantity a value as described in Section 3.4.

5.3 *Targets. Population within a four-mile radius* is an indicator of the population which may be harmed should hazardous substances be released to the air.

The distance is measured from the location of the hazardous substances, not from the facility boundary. The population to be counted includes persons residing within the four-mile radius as well as transients such as workers in factories, offices, restaurants, motels, or students. It excludes travelers passing through the area. If aerial photography is used in making the count, assume 3.8 individuals per dwelling unit. Select the highest value for this rating factor as follows:

DISTANCE TO POPULATION FROM HAZARDOUS SUBSTANCE

Population	0–4 miles	0–1 mile	0–½ mile	0–¼ mile
0	0	0	0	0
1 to 100	9	12	15	18
101 to 1,000	12	15	18	21
1,001 to 3,000	15	18	21	24
3,001 to 10,000	18	21	24	27
More than 10,000	21	24	27	30

Distance to sensitive environment is an indicator of the likelihood that a region that contains important biological resources or that is a fragile natural setting would suffer serious damage if hazardous substances were to be released from the facility. Assign a value from Table 10.

Land use indicates the nature and level of human activity in the vicinity of a facility. Assign highest applicable value from Table 13.

TABLE 13—VALUES FOR LAND USE (AIR ROUTE)

Assigned value=	0	1	2	3
Distance to Commercial-Industrial	>1mile	½ to 1 mile	¼ to ½ mile	< ¼ mile.
Distance to National/State Parks, Forests, Wildlife Reserves, and Residential Areas.	>2 miles	1 to 2 miles	¼ to 1 mile	< ¼ mile.

TABLE 13—VALUES FOR LAND USE (AIR ROUTE)—Continued

Assigned value=	0	1	2	3
Distance to Agricultural Lands (in Production within 5 years):				
Ag land	>1 mile	½ to 1 mile	¼ to ½ mile	< ¼ mile.
Prime Ag Land [1]	>2 miles	1 to 2 miles	½ to 1 mile	< ½ mile.
Distance to Historic/Landmark Sites (National Register of Historic Places and National Natural Landmarks).				Within view of site or if site is subject to significant impacts.

[1] Defined in the Code of Federal Regulations, 7 CFR 657.5, 1981.

6.0 Computing the Migration Hazard Mode Score, S_M

To compute S_M, complete the work sheet (Figure 10) using the values of S_{gw}, S_{sw} and S_a obtained from the previous sections.

	S	S^2
Groundwater Route Score (S_{gw})		
Surface Water Route Score (S_{sw})		
Air Route Score (S_a)		
$S^2_{gw} + S^2_{sw} + S^2_a$	▨	
$\sqrt{S^2_{gw} + S^2_{sw} + S^2_a}$	▨	
$\sqrt{S^2_{gw} + S^2_{sw} + S^2_a}\ /\ 1.73 = S_M =$	▨	

FIGURE 10
WORKSHEET FOR COMPUTING S_M

7.0 Fire and Explosion

Compute a score for the fire and explosion hazard mode, S_{FE}, when either a state or local fire marshall has certified that the facility presents a significant fire or explosion threat to the public or to sensitive environments or there is a demonstrated fire and explosion threat based on field observations (e.g., combustible gas indicator readings). Document the threat.

7.1 *Containment. Containment* is an indicator of the measures that have been taken to minimize or prevent hazardous substances at the facility from catching fire or exploding. Normally it will be given a value of 3 on the work sheet (Figure 11). If no hazardous substances that are individually ignitable or explosive are present and those that may be hazardous in combination are segregated and isolated so that they cannot come together to form incompatible mixtures, assign this factor a value of 1.

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
	Total Targets Score			24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100	S_{FE} =				

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

7.2 *Waste Characteristics. Direct evidence* of ignitability or explosion potential may exist in the form of measurements with appropriate instruments. If so, assign this factor a value of 3; if not, assign a value of 0.

Ignitability is an indicator of the threat of fire at a facility and the accompanying potential for release of air contaminants. Assign this rating factor a value based on the NFPA classification scheme (Table 14). Table 4 gives values for a number of common compounds. Assign values as follows:

Ignitability	Assigned value
Flashpoint >200°F, or NFPA level 0	0
Flashpoint 140°F to 200°F or NFPA level 1	1
Flashpoint 80°F to 140°F or NFPA level 2	2
Flashpoint <80°F or NFPA levels 3 or 4	3

TABLE 14—NFPA Ignitability Levels and Assigned Values

NFPA level	Assigned value
4 Very flammable gases, very volatile flammable liquids, and materials that in the form of dusts or mists readily form explosive mixtures when dispersed in air	3
3 Liquids which can be ignited under all normal temperature conditions. Any materials that ignites spontaneously at normal temperatures in air	
2 Liquids which must be moderately heated before ignition will occur and solids that readily give off flammable vapors	2
1 Materials that must be preheated before ignition can occur. Most combustible solids have a flammability rating of 1	1
0 Materials that will not burn	0

Reactivity. Assign values as in Section 5.2.

Incompatibility. Assign values as in Section 5.2.

Hazardous Waste Quantity. Assign values as in Section 3.4.

7.3 *Targets. Distance to nearest population* is the distance from the hazardous substance to the nearest building or area in which one or more persons are likely to be located either for residential, educational, business, occupational, or recreational purposes. It is an indicator of the potential for harm to humans from fire and explosion. The building or area need not be off-site. Assign values as follows:

Distance	Assigned value
>2 miles	0
1 mile to 2 mile	1
½ mile to 1 miles	2
201 feet to ½ mile	3
51 feet to 200 feet	4
0 to 50 feet	5

Distance to nearest building is an indicator of the potential for property damage as a result of fire or explosion. Assign a value as follows:

Distance	Assigned value
> ½ mile	0
201 feet to ½ mile	1
51 feet to 200 feet	2
0 to 50 feet	3

Distance to nearest sensitive environment is measured from the hazardous substances, not from the facility boundary. It is an indicator of potential harm to a sensitive environment from fire or explosion at the facility. Select the highest value using the guidance provided in Table 15 *except* assign a value of 3 where fire could be expected to spread to a sensitive environment even though that environment is more than 100 feet from the hazardous substance.

TABLE 15—Values for Sensitive Environments (Fire and Explosion)

Assigned value=	0	1	2	3
Distance to Wetlands[1]	>100 feet			<100 feet.
Distance to Critical Habitat[2]	>½ mile	1000 feet to ½ mile.	100 to 1000 feet	<100 feet.

[1] Wetland is defined by EPA in the Code of Federal Regulations 40 CFR Part 230, Appendix A, 1980.
[2] Designated by the U.S. Fish and Wildlife Service.

Land Use. Assign values as in Section 5.3.

Population within two-mile radius (measured from the location of the hazardous substance, not from the facility boundary) is a rough indicator of the population at risk in the event of fire or explosion at a facility. The population to be counted includes those residing within the two mile radius as well as people regularly in the vicinity such as workers in factories, offices, or students. It does not include travelers passing through the area. If aerial photography is used in making the count, assume 3.8 individuals per dwelling. Assign values as follows:

Population	Assigned value
0	0
1 to 100	1
101 to 1,000	2
1,001 to 3,000	3
3,001 to 10,000	4
>10,000	5

Number of buildings within two mile radius (measured from the hazardous substance, not from the facility boundary) is a rough indicator of the property damage that could result from fire and explosion at a facility. Assign values to this factor as follows:

Number of buildings	Assigned value
0	0
1 to 26	1
27 to 260	2
261 to 790	3
791 to 2600	4
>2600	5

8.0 Direct Contact. The direct contact hazard mode refers to the potential for injury by direct contact with hazardous substances at the facility.

8.1 *Observed Incident.* If there is a confirmed instance in which contact with hazardous substances at a facility has caused injury, illness, or death to humans or domestic or wild animals, enter a value of 45 on line 1 of the work sheet (Figure 12) and proceed to line 4 (toxicity). Document the incident giving the date, location and pertinent details. If no such instance is known, enter "0" on line 1 and proceed to line 2.

Direct Contact Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
$\boxed{1}$ Observed Incident	0 45	1		45	8.1
If line $\boxed{1}$ is 45, proceed to line $\boxed{4}$ If line $\boxed{1}$ is 0, proceed to line $\boxed{2}$					
$\boxed{2}$ Accessibility	0 1 2 3	1		3	8.2
$\boxed{3}$ Containment	0 15	1		15	8.3
$\boxed{4}$ Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
$\boxed{5}$ Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
	Total Targets Score			32	
$\boxed{6}$ If line $\boxed{1}$ is 45, multiply $\boxed{1}$ x $\boxed{4}$ x $\boxed{5}$ If line $\boxed{1}$ is 0, multiply $\boxed{2}$ x $\boxed{3}$ x $\boxed{4}$ x $\boxed{5}$				21,600	
$\boxed{7}$ Divide line $\boxed{6}$ by 21,600 and multiply by 100	S_{DC} =				

FIGURE 12
DIRECT CONTACT WORK SHEET

8.2 *Accessibility. Accessibility to hazardous substance* refers to the measures taken to limit access by humans or animals to hazardous substances. Assign a value using the following guidance:

Barrier	Assigned value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or an artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility)	0
Security guard, but no barrier	1
A barrier, but no separate means to control entry	2
Barriers do not completely surround the facility	3

8.3 *Containment. Containment* indicates whether the hazardous substance itself is accessible to direct contact. For example, if the hazardous substance at the facility is in surface impoundments, containers (sealed or unsealed), piles, tanks, or landfills with a cover depth of less than 2 feet, or has been spilled on the ground or other surfaces easily contacted (e.g., the bottom of shallow pond or creek), assign this rating factor a value of 15. Otherwise, assign a value of 0.

8.4 *Waste Characteristics. Toxicity.* Assign a value as in Section 3.4.

8.5 *Targets. Population within one-mile radius* is a rough indicator of the population that could be involved in direct contact incidents at an uncontrolled facility. Assign a value as follows:

Population	Assigned value
0	0
1 to 100	1
101 to 1,000	2
1,001 to 3,000	3
3,001 to 10,000	4
>10,000	5

Distance to a critical habitat (of an endangered species) is a rough measure of the probability of harm to members of an endangered species by direct contact with hazardous substance. Assign a value as follows:

Distance	Assigned value
<1 mile	0
½ to 1 mile	1
¼ to ½ mile	2
> ¼ mile	3

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]	Cleanup Status [2]
			Group 1 (HRS Scores 75.60—58.41)			
1	02	NJ	Lipari Landfill	Pitman	R F	O
2	03	DE	Tybouts Corner Landfill *	New Castle County	V R F	O
3	03	PA	Bruin Lagoon	Bruin Borough	R F	O
4	02	NJ	Helen Kramer Landfill	Mantua Township	R S	
5	01	MA	Industri-Plex	Woburn	V R F	O
6	02	NJ	Price Landfill *	Pleasantville	V R F	O
7	02	NY	Pollution Abatement Services *	Oswego	R	O
8	07	IA	LaBounty Site	Charles City	V F	O
9	03	DE	Army Creek Landfill	New Castle County	V R F	O
10	02	NJ	CPS/Madison Industries	Old Bridge Township	V S	
11	01	MA	Nyanza Chemical Waste Dump	Ashland	R F	
12	02	NJ	GEMS Landfill	Gloucester Township	R S	I
13	05	MI	Berlin & Farro	Swartz Creek	V R F S	O
14	01	MA	Baird & McGuire	Holbrook	R F	O
15	02	NJ	Lone Pine Landfill	Freehold Township	V R F	
16	01	NH	Somersworth Sanitary Landfill	Somersworth	R	
17	05	MN	FMC Corp. (Fridley Plant)	Fridley	V	O
18	06	AR	Vertac, Inc.	Jacksonville	V F S	O
19	01	NH	Keefe Environmental Services	Epping	R S	O
20	08	MT	Silver Bow Creek/Butte Area	Sill Bow/Deer Lodge	R	
21	08	SD	Whitewood Creek*	Whitewood	V	

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]	Cleanup Status [2]
22	06	TX	French, Ltd.	Crosby	V R F	O
23	01	NH	Sylvester *	Nashua	R S	O
24	05	MI	Liquid Disposal, Inc.	Utica	R	O
25	03	PA	Tysons Dump	Upper Merion Twp	V R F	O
26	03	PA	McAdoo Associates *	McAdoo Borough	V R F	O
27	06	TX	Motco, Inc. *	La Marque	V R F	O
28	05	OH	Arcanum Iron & Metal	Darke County	R F	
29	08	MT	East Helena Site	East Helena	V F	
30	06	TX	Sikes Disposal Pits	Crosby	R	O
31	04	AL	Triana/Tennessee River	Limestone/Morgan	V R F	O
32	09	CA	Stringfellow *	Glen Avon Heights	R F	O
33	01	ME	McKin Co.	Gray	V R F S	O
34	06	TX	Crystal Chemical Co.	Houston	R F	O
35	02	NJ	Bridgeport Rental & Oil Services	Bridgeport	R	O
36	08	CO	Sand Creek Industrial	Commerce City	R F	O
37	06	TX	Geneva Industries/Fuhrmann Energy	Houston	R F	O
38	01	MA	W.R. Grace & Co Inc (Acton Plant)	Acton	V F S	O
39	02	NJ	Burnt Fly Bog	Marlboro Township	R S	O
40	02	NJ	Vineland Chemical Co., Inc.	Vineland	V R	
41	04	FL	Schuylkill Metals Corp.	Plant City	D	O
42	05	MN	Reilly Tar (St. Louis Park Plant) *	St. Louis Park	R F S	O
43	05	MN	New Brighton /Arden Hills	New Brighton	R	O
44	02	NY	Old Bethpage Landfill	Oyster Bay	V S	
45	04	FL	Reeves Southeast Galvanizing Corp	Tampa	D	O
46	02	NJ	Shieldalloy Corp.	Newfield Borough	V S	
47	08	MT	Anaconda C. Smelter	Anaconda	V F	I
48	10	WA	Western Processing Co., Inc.	Kent	V R F S	O
49	05	WI	Omega Hills North Landfill	Germantown	S	
50	04	FL	American Creosote (Pensacola Pit)	Pensacola	R F	O
Group 2 (HRS Scores 58.30—55.71, except for State top priority sites)						
51	02	NJ	Caldwell Trucking Co.	Fairfield	R F	
52	02	NY	GE Moreau	South Glen Falls	V F S	O
53	04	FL	Peak Oil Co./Bay Drum Co.	Tampa	R	
54	05	OH	United Scrap Lead Co., Inc.	Troy	R	O
55	06	OK	Tar Creek (Ottawa County)	Ottawa County	R	C
56	07	KS	Cherokee County	Cherokee County	R	I
57	05	IN	Seymour Recycling Corp.*	Seymour	V R F	O
58	02	NJ	Brick Township Landfill	Brick Township	V S	
59	05	MI	American Anodco, Inc.	Ionia	V	O
60	05	MI	Northernaire Plating	Cadillac	R	O
61	05	WI	Janesville Old Landfill	Janesville	F	
62	10	WA	Frontier Hard Chrome, Inc.	Vancouver	R	
63	04	SC	Independent Nail Co.	Beaufort	R	
64	05	WI	Janesville Ash Beds	Janesville	F	
65	04	SC	Kalama Specialty Chemicals	Beaufort	F S	
66	04	FL	Davie Landfill	Davie	V R F S	I
67	05	OH	Miami County Incinerator	Troy	F	
68	05	IN	International Minerals (E. Plant)	Terre Haute	F	
69	04	FL	Gold Coast Oil Corp.	Miami	R	O
70	05	WI	Wheeler Pit	La Prairie Township	S	
71	09	AZ	Tucson International Airport Area	Tucson	R	
72	09	CA	Operating Industries, Inc. Landfill	Monterey Park	F	
73	02	NY	Wide Beach Development	Brant	R	O
74	09	CA	Iron Mountain Mine	Redding	R	I
75	02	NJ	Scientific Chemical Processing	Carlstadt	V F S	O
76	08	CO	California Gulch	Leadville	F	
77	02	NJ	D'Imperio Property	Hamilton Township	R	I
78	05	MN	Oakdale Dump	Oakdale	V	O
79	05	MI	Gratiot County Landfill *	St. Louis	V R F S	O
80	01	RI	Picillo Farm *	Coventry	R F S	O
81	01	MA	New Bedford Site *	New Bedford	V R F S	O
82	06	LA	Old Inger Oil Refinery *	Darrow	R	O
83	05	OH	Chem-Dyne *	Hamilton	V R F S	O
84	04	SC	SCRDI Bluff Road *	Columbia	V R F	O
85	01	CT	Laurel Park, Inc. *	Naugatuck Borough	V F S	

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]					Cleanup Status [2]
86	08	CO	Marshall Landfill *	Boulder County			F			O
87	05	IL	Outboard Marine Corp.*	Waukegan		R	F			
88	06	NM	South Valley*	Albuquerque		R	F			I
89	01	VT	Pine Street Canal *	Burlington			F			
90	03	WV	West Virginia Ordnance *	Point Pleasant	V		F			O
91	07	MO	Ellisville Site *	Ellisville		R	F	S		O
92	08	ND	Arsenic Trioxide Site *	Southeastern ND		R				I
93	07	IA	Aidex Corp. *	Council Bluffs		R				O
94	05	WI	N.W. Mauthe Co., Inc. *	Appleton		R		S		O
95	04	TN	North Hollywood Dump *	Memphis	V	R		S		O
96	04	KY	A.L. Taylor (Valley of Drums) *	Brooks		R	F			I
97	09	GU	Ordot Landfill *	Guam		R				
98	04	MS	Flowood Site *	Flowood	V					
99	08	UT	Rose Park Sludge Pit *	Salt Lake City	V					C
100	07	KS	Arkansas City Dump *	Arkansas City		R				I
Group 3 (HRS Scores 55.58—52.06)										
101	05	IL	Parsons Casket Hardware Co	Belvidere					D	
102	05	IL	A & F Material Reclaiming, Inc	Greenup			F			O
103	03	PA	Douglassville Disposal	Douglassville		R				I
104	05	MN	Koppers Coke	St. Paul	V			S		
105	01	MA	Plymouth Harbor/Cannon Eng. Corp	Plymouth	V	R	F	S		O
106	10	ID	Bunker Hill Mining & Metallurg	Smelterville		R	F			I
107	02	NY	Hudson River PCBs	Hudson River		R				I
108	02	NJ	Universal Oil Products (Chem Div)	East Rutherford	V			S		
109	09	CA	Aerojet General Corp	Rancho Cordova			F			I
110	10	WA	Com Bay, South Tacoma Channel	Tacoma	V	R	F	S		O
111	03	PA	Osborne Landfill	Grove City	V		F	S		I
112	08	UT	Portland Cement (Kiln Dust 2 & 3)	Salt Lake City	V			S		
113	01	CT	Old Southington Landfill	Southington	V		F	S		
114	02	NY	Syosset Landfill	Oyster Bay	V		F			
115	02	NY	Circuitron Corp	East Farmingdale					D	
116	09	AZ	Nineteenth Avenue Landfill	Phoenix				S		
117	10	OR	Teledyne Wah Chang	Albany	V		F			
118	10	WA	Midway Landfill	Kent						O
								S		
119	02	NY	Sinclair Refinery	Wellsville		R				O
120	04	AL	Mowbray Engineering Co	Greenville		R				
121	05	MI	Spiegelberg Landfill	Green Oak Township		R				O
122	04	FL	Miami Drum Services	Miami		R	F			O
123	02	NJ	Reich Farms	Pleasant Plains		R				
124	10	ID	Union Pacific Railroad Co	Pocatello			F			
125	02	NJ	South Brunswick Landfill	South Brunswick	V		F			O
126	04	AL	Ciba-Geigy Corp. (McIntosh Plant)	McIntosh					D	I
127	04	FL	Kassauf-Kimerling Battery	Tampa	V	R		S		I
128	05	IL	Wauconda Sand & Gravel	Wauconda		R				
129	05	MI	Bofors Nobel, Inc	Muskegon		R		S		
130	06	TX	Bailey Waste Disposal	Bridge City		R	F			
131	01	NH	Ottati & Goss/Kingston Steel Drum	Kingston	V	R	F	S		O
132	05	MI	Ott/Story/Cordova Chemical Co	Dalton Township	V	R	F	S		O
133	05	MI	Thermo-Chem, Inc	Muskegon			F			
134	03	VA	Greenwood Chemical Co	Newtown		R				O
135	02	NJ	NL Industries	Pedricktown	V		F			
136	05	MN	St. Regis Paper Co	Cass Lake				S		I
137	04	NC	Aberdeen Pesticide Dumps	Aberdeen	V	R		S		O
138	01	VT	Burgess Brothers Landfill	Woodford					D	
139	02	NJ	Ringwood Mines/Landfill	Ringwood Borough	V		F			
140	04	FL	Whitehouse Oil Pits	Whitehouse		R				O
141	04	GA	Hercules 009 Landfill	Brunswick					D	
142	02	NY	Jones Sanitation	Hyde Park				S		
143	05	MI	Velsicol Chemical (Michigan)	St. Louis	V			S		I
144	05	OH	Summit National	Deerfield Township		R				O
145	02	NY	Love Canal	Niagara Falls		R	F	S		O
146	03	DE	Coker's Sanitation Service Lndfls	Kent County	V					
147	05	MI	Rockwell International (Allegan)	Allegan			F			
148	05	MN	Pine Bend Sanitary Landfill	Dakota County				S		

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]					Cleanup Status [2]
149	07	IA	Lawrence Todtz Farm	Camanche	V					
150	05	IN	Fisher-Calo	LaPorte			F			
Group 4 (HRS Scores 51.97—43.89)										
151	04	FL	Pioneer Sand Co	Warrington		R		S		
152	05	MI	Springfield Township Dump	Davisburg		R				
153	03	PA	Hranica Landfill	Buffalo Township	V		F	S		O
154	04	NC	Martin-Marietta, Sodyeco, Inc	Charlotte	V					
155	03	PA	Hellertown Manufacturing Co	Hellertown	V		F			
156	04	FL	Zellwood Ground Water Contamin	Zellwood			F			I
157	05	MI	Packaging Corp. of America	Filer City	V		F			
158	05	WI	Muskego Sanitary Landfill	Muskego			F			
159	02	NY	Hooker (S Area)	Niagara Falls	V		F	S		
160	03	PA	Lindane Dump	Harrison Township	V			S		O
161	08	CO	Central City-Clear Creek	Idaho Springs		R				
162	02	NJ	Ventron/Velsicol	Wood Ridge Borough	V	R		S		
163	04	FL	Taylor Road Landfill	Seffner	V		F			O
164	01	RI	Western Sand & Gravel	Burrillville	V	R		S		O
165	02	NY	Rosen Brothers Scrap Yard/Dump	Cortland		R				O
166	04	SC	Koppers Co Inc (Florence Plant)	Florence				S		
167	02	NJ	Maywood Chemical Co	Maywood/Rochelle Pk		R				O
168	02	NJ	Nascolite Corp	Millville		R				
169	05	OH	Industrial Excess Landfill	Uniontown		R		S		I
170	06	OK	Hardage/Criner	Criner		R	F			
171	05	MI	Rose Township Dump	Rose Township		R				
172	05	MN	Waste Disposal Engineering	Andover	V	R	F	S		
173	02	NY	Liberty Industrial Finishing	Farmingdale	V			S		O
174	02	NJ	Kin-Buc Landfill	Edison Township	V	R	F			O
175	05	IN	Waste, Inc., Landfill	Michigan City	V		F	S		
176	05	OH	Bowers Landfill	Circleville	V		F			
177	06	TX	Brio Refining, Inc	Friendswood	V		F			
178	02	NJ	Ciba-Geigy Corp	Toms River	V		F			
179	05	MI	Butterworth #2 Landfill	Grand Rapids			F			
180	02	NJ	American Cyanamid Co	Bound Brook	V			S		
181	03	PA	Heleva Landfill	North Whitehall Twp	V	R	F			O
182	02	NJ	Ewan Property	Shamong Township		R				
183	02	NY	Batavia Landfill	Batavia	V		F			
184	05	MN	Boise Cascade/Onan/Medtronics	Fridley				S		O
185	01	RI	Landfill & Resource Recovery	North Smithfield			F	S		
186	03	PA	Butler Mine Tunnel	Pittston	V	R	F			O
187	04	FL	Northwest 58th Street Landfill	Hialeah	V	R	F	S		I
188	02	NJ	Delilah Road	Egg Harbor Township		R				
189	03	PA	Mill Creek Dump	Erie		R				O
190	02	NJ	Glen Ridge Radium Site	Glen Ridge		R				O
191	02	NJ	Montclair/West Orange Radium Site	Montclair/W Orange		R				O
192	04	FL	Sixty-Second Street Dump	Tampa		R				I
193	05	MI	G&H Landfill	Utica		R				
194	01	VT	Bennington Municipal Sanitary Lfl	Bennington					D	
195	04	NC	Celanese (Shelby Fiber Operations)	Shelby	V					I
196	02	NJ	Metaltec/Aerosystems	Franklin Borough		R				
197	05	WI	Schmalz Dump	Harrison		R				
198	05	MI	Motor Wheel, Inc	Lansing			F			O
199	09	CA	Southern Calif Edison (Visalia)	Visalia	V			S		O
200	02	NJ	Lang Property	Pemberton Township			F			
Group 5 (HRS Scores 48.86–46.44)										
201	06	TX	Stewco, Inc	Waskom		R	F			O
202	02	NJ	Sharkey Landfill	Parsippany/Troy Hls		R				
203	09	CA	Selma Treating Co	Selma			F			
204	06	LA	Cleve Reber	Sorrento		R				I
205	05	IL	Velsicol Chemical (Illinois)	Marshall		R				C
206	05	MI	Tar Lake	Mancelona Township			F			
207	02	NY	Johnstown City Landfill	Town of Johnstown		R				
208	04	NC	NC State U (Lot 86, Farm Unit #1)	Raleigh					D	

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APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]					Cleanup Status [2]
209	08	CO	Lowry Landfill	Arapahoe County	V	R				O
210	05	MN	MacGillis & Gibbs/Bell Lumber	New Brighton		R		S		I
211	03	PA	Hunterstown Road	Straban Township	V	R	F			O
212	03	MD	Woodlawn County Landfill	Woodlawn					D	
213	05	WI	Hechimovich Sanitary Landfill	Williamstown					D	
214	07	IA	Mid-America Tanning Co	Sergeant Bluff					D	
215	02	NJ	Combe Fill North Landfill	Mount Olive Twp		R				
216	01	MA	Re-Solve, Inc	Dartmouth	V	R	F			I
217	02	NJ	Goose Farm	Plumstead Township	V	R	F	S		O
218	04	TN	Velsicol Chem (Hardeman County)	Toone				S		O
219	02	NY	York Oil Co	Moira		R	F			O
220	04	FL	Sapp Battery Salvage	Cottondale		R				O
221	04	SC	Wamchem, Inc	Burton	V					
222	02	NJ	Chemical Leaman Tank Lines, Inc	Bridgeport	V		F			
223	05	WI	Master Disposal Service Landfill	Brookfield		R				
224	07	KS	Doepke Disposal (Holliday)	Johnson County		R				I
225	02	NJ	Florence Land Recontouring Lndfll	Florence Township		R				
226	01	RI	Davis Liquid Waste	Smithfield		R		S		O
227	01	MA	Charles-George Reclamation Lndfll	Tyngsborough		R	F			O
228	02	NJ	King of Prussia	Winslow Township	V		F			
229	03	VA	Chisman Creek	York County	V	R				I
230	05	OH	Nease Chemical	Salem	V			S		I
231	08	CO	Eagle Mine	Minturn/Redcliff		R		S		O
232	02	NJ	Chemical Control	Elizabeth		R		S		O
233	04	NC	Charles Macon Lagoon & Drum Stor	Cordova		R	F			O
234	04	SC	Leonard Chemical Co., Inc	Rock Hill			F	S		O
235	05	OH	Allied Chemical & Ironton Coke	Ironton		R	F			I
236	05	MI	Verona Well Field	Battle Creek		R				I
237	07	MO	Lee Chemical	Liberty					D	O
238	01	CT	Beacon Heights Landfill	Beacon Falls	V	R	F			
239	04	AL	Stauffer Chem (Cold Creek Plant)	Bucks	V					
240	05	MN	Burlington Northern (Brainerd)	Brainerd/Baxter	V					O
241	05	MI	Torch Lake	Houghton County		R				
242	01	RI	Central Landfill	Johnston	V		F	S		
243	03	PA	Malvern TCE	Malvern					D	O
244	02	NY	Facet Enterprises, Inc	Elmira	V		F			
245	03	DE	Delaware Sand & Gravel Landfill	New Castle County		R				O
246	03	PA	MW Manufacturing	Valley Township		R		S		O
247	03	VA	C & R Battery Co., Inc	Chesterfield County		R				O
248	04	TN	Murray-Ohio Dump	Lawrenceburg	V			S		
249	05	IN	Envirochem Corp	Zionsville	V	R	F			O
250	05	IN	MIDCO I	Gary			F			O
Group 6 (HRS Scores 45.44–43.78)										
251	05	OH	Ormet Corp	Hannibal	V		F	S		
252	05	OH	South Point Plant	South Point			F			I
253	03	PA	Whitmoyer Laboratories	Jackson Township		R				
254	04	FL	Coleman-Evans Wood Preserving Co	Whitehouse		R	F	S		O
255	02	NJ	Dayco Corp./L.E Carpenter Co	Wharton Borough	V			S		O
256	03	PA	Shriver's Corner	Straban Township	V	R	F			O
257	03	PA	Dorney Road Landfill	Upper Macungie Twp		R				O
258	05	IN	Northside Sanitary Landfill, Inc	Zionsville			F	S		
259	05	IL	Interstate Pollution Control, Inc	Rockford					D	
260	02	NJ	Global Sanitary Landfill	Old Bridge Township					D	
261	04	FL	Florida Steel Corp	Indiantown	V					O
262	05	IL	Pagel's Pit	Rockford			F			O
263	05	MN	University Minn Rosemount Res Cen	Rosemount				S		
264	05	MN	Freeway Sanitary Landfill	Burnsville				S		
265	05	WI	Tomah Municipal Sanitary Landfill	Tomah					D	
266	09	AZ	Litchfield Airport Area	Goodyear/Avondale			F			
267	09	CA	Firestone Tire (Salinas Plant)	Salinas				S		O
268	02	NJ	Spence Farm	Plumstead Township	V	R		S		I
269	06	AR	Mid-South Wood Products	Mena	V		F			I
270	04	MS	Newsom Brothers/Old Reichold	Columbia		R				O
271	09	CA	Atlas Asbestos Mine	Fresno County		R				
272	09	CA	Coalinga Asbestos Mine	Coalinga		R				

Appendix B—National Priorities List (by Rank) March 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category[1]	Cleanup Status[2]
273	04	FL	Brown Wood Preserving	Live Oak	V F	
274	02	NY	Port Washington Landfill	Port Washington	R F	
275	05	IN	Columbus Old Municipal Lndfl #1	Columbus	F	
276	02	NJ	Combe Fill South Landfill	Chester Township	R	
277	02	NJ	JIS Landfill	Jamesburg/S. Brnswck	S	
278	02	NY	Tronic Plating Co., Inc.	Farmingdale	V F	
279	03	PA	Centre County Kepone	State College Boro	S	O
280	05	OH	Fields Brook	Ashtabula	R	I
281	01	CT	Solvents Recovery Service New Eng	Southington	F	I
282	08	CO	Woodbury Chemical Co	Commerce City	R	
283	02	NJ	Waldwick Aerospace Devices, Inc	Wall Township	R S	O
284	01	MA	Hocomonco Pond	Westborough	R	
285	04	KY	Distler Brickyard	West Point	R F	O
286	02	NY	Ramapo Landfill	Ramapo	V R S	
287	09	CA	Coast Wood Preserving	Ukiah	S	
288	09	CA	South Bay Asbestos Area	Alviso	R	I
289	02	NY	Mercury Refining, Inc	Colonie	V S	O
290	04	FL	Hollingsworth Solderless Terminal	Fort Lauderdale	R	I
291	02	NY	Olean Well Field	Olean	V R F	O
292	05	MN	Joslyn Manufacturing & Supply Co	Brooklyn Center	V S	
293	03	PA	York County Solid Waste/Refuse Lf	Hopewell Township	V S	O
294	05	WI	Spickler Landfill	Spencer	R	
295	08	CO	Denver Radium Site	Denver	R	I
296	03	PA	Route 940 Drum Dump	Pocono Summit	V S	I
297	04	FL	Tower Chemical Co	Clermont	R F	O
298	03	PA	C & D Recycling	Foster Township	V R	O
299	07	MO	Syntex Facility	Verona	V F	O
300	08	MT	Milltown Reservoir Sediments	Milltown	R	I
			Group 7 (HRS Scores 43.75–42.24)			
301	05	MN	Arrowhead Refinery Co	Hermantown	R	I
302	10	OR	Martin-Marietta Aluminum Co	The Dalles	V F	
303	08	CO	Uravan Uranium (Union Carbide)	Uravan	D	
304	02	NJ	Pijak Farm	Plumstead Township	V R S	I
305	02	NJ	Syncon Resins	South Kearny	R	O
306	05	MN	Oak Grove Sanitary Landfill	Oak Grove Township	R	
307	09	CA	Liquid Gold Oil Corp	Richmond	S	
308	09	CA	Purity Oil Sales, Inc	Malaga	R	O
309	01	NH	Tinkham Garage	Londonderry	F S	O
310	04	FL	Alpha Chemical Corp	Galloway	V	
311	02	NJ	Bog Creek Farm	Howell Township	R	
312	01	ME	Saco Tannery Waste Pits	Saco	R	O
313	02	PR	Frontera Creek	Rio Abajo	F	
314	04	FL	Pickettville Road Landfill	Jacksonville	V F	I
315	05	OH	Alsco Anaconda	Gnadenhutten	S	
316	01	MA	Iron Horse Park	Billerica	R	O
317	03	PA	Palmerton Zinc Pile	Palmerton	V F	O
318	05	IN	Neal's Landfill (Bloomington)	Bloomington	V F	
319	05	WI	Kohler Co. Landfill	Kohler	V	
320	04	AL	Interstate Lead Co. (ILCO)	Leeds	V R F S	O
321	07	KS	Hydro-Flex Inc	Topeka	D	
322	09	AZ	Hassayampa Landfill	Hassayampa	V	
323	06	LA	Gulf Coast Vacuum Services	Abbeville		
324	05	IL	Tri-County Lf/Waste Mgmt Illinois	South Elgin	R	
325	01	MA	Silresim Chemical Corp	Lowell	R S	O
326	01	MA	Wells G&H	Woburn	V F	
327	01	CT	Nutmeg Valley Road	Wolcott	D	
328	02	NJ	Chemsol, Inc	Piscataway	V S	
329	05	WI	Lauer I Sanitary Landfill	Menomonee Falls	S	
330	05	MI	Petoskey Municipal Well Field	Petoskey	F	
331	05	MN	Union Scrap Iron & Metal Co	Minneapolis	S	
332	02	NJ	Radiation Technology, Inc	Rockaway Township	V S	
333	02	NJ	Fair Lawn Well Field	Fair Lawn	V S	
334	05	IN	Main Street Well Field	Elkhart	R	
335	05	MN	Lehillier/Mankato Site	Lehillier/Mankato	R	O
336	10	WA	Lakewood Site	Lakewood	R	O

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]	Cleanup Status [2]
337	03	PA	Industrial Lane	Williams Township	R F	
338	05	IN	Fort Wayne Reduction Dump	Fort Wayne	R	
339	05	WI	Onalaska Municipal Landfill	Onalaska	R	
340	05	WI	National Presto Industries, Inc	Eau Claire	F	
341	02	NJ	Monroe Township Landfill	Monroe Township	V S	O
342	02	NJ	Rockaway Borough Well Field	Rockaway Township	R	
343	05	IN	Wayne Waste Oil	Columbia City	R F	
344	03	MD	Mid-Atlantic Wood Preservers, Inc	Harmans	V F	
345	10	ID	Pacific Hide & Fur Recycling Co	Pocatello	R F	O
346	07	IA	Des Moines TCE	Des Moines	R	I
347	02	NJ	Beachwood/Berkley Wells	Berkley Township	F	
348	02	NY	Vestal Water Supply Well 4-2	Vestal	V S	I
349	02	PR	Vega Alta Public Supply Wells	Vega Alta	F	
350	05	IL	Southeast Rockford Grnd Wtr Con	Rockford	D	
Group 8 (HRS Scores 42.24–40.37)						
351	05	IN	Galen Myers Dump/Drum Salvage	Osceola	R	O
352	05	MI	Sturgis Municipal Wells	Sturgis	R	
353	05	MN	Washington County Landfill	Lake Elmo	S	
354	06	TX	Odessa Chromium #1	Odessa	R	
355	06	TX	Odessa Chromium #2 (Andrews Hgwy).	Odessa	R	
356	07	NE	Hastings Ground Water Contamin	Hastings	R	I
357	09	AZ	Indian Bend Wash Area	Scottsdale/Tmpe/Phnx	V F	
358	09	CA	San Gabriel Valley (Area 1)	El Monte	R	I
359	09	CA	San Gabriel Valley (Area 2)	Baldwin Park Area	R	
360	09	CA	San Fernando Valley (Area 1)	Los Angeles	D	
361	09	CA	San Fernando Valley (Area 2)	Los Angeles/Glendale	D	
362	09	CA	San Fernando Valley (Area 3)	Glendale	D	
363	09	CA	T.H. Agriculture & Nutrition Co	Fresno	D	
364	10	WA	Com Bay, Near Shore/Tide Flats	Pierce County	V R F S	
365	05	IL	LaSalle Electric Utilities	LaSalle	R	I
366	05	IL	Cross Brothers Pail (Pembroke)	Pembroke Township	R	I
367	04	NC	Jadco-Hughes Facility	Belmont	D	
368	05	IN	Southside Sanitary Landfill	Indianapolis	V S	
369	02	NJ	Monitor Devices/Intercircuits Inc	Wall Township	R	
370	02	PR	Upjohn Facility	Barceloneta	V F	O
371	04	NC	Koppers Co Inc (Morrisville Plnt)	Morrisville	D	I
372	09	CA	McColl	Fullerton	R F	I
373	03	PA	Henderson Road	Upper Merion Twp	V F	
374	02	NY	Hooker Chemical/Ruco Polymer Corp.	Hicksville	F	
375	10	WA	Colbert Landfill	Colbert	V R F	O
376	06	LA	Petro-Processors of Louisiana Inc	Scotlandville	V R F S	O
377	02	NY	Applied Environmental Services	Glenwood Landing	V S	O
378	02	PR	Barceloneta Landfill	Florida Afuera	F	
379	01	NH	Tibbets Road	Barrington	R	O
380	03	MD	Sand, Gravel & Stone	Elkton	V R F	O
381	03	PA	Delta Quarries/Stotler Landfill	Antis/Logan Twps	V F S	
382	01	CT	Revere Textile Prints Corp	Sterling	D	
383	05	MI	Spartan Chemical Co	Wyoming	V S	
384	02	NJ	Roebling Steel Co	Florence	R	
385	03	PA	East Mount Zion	Springettsbury Twp	R	
386	04	GA	T.H. Agricul & Nutri (Albany)	Albany	D	I
387	04	TN	Amnicola Dump	Chattanooga	R	
388	02	NJ	Vineland State School	Vineland	V S	I
389	01	MA	Groveland Wells	Groveland	V R S	
390	02	NY	General Motors (Cent Foundry Div)	Massena	V F	O
391	01	NH	Mottolo Pig Farm	Raymond	R F S	O
392	04	SC	SCRDI Dixiana	Cayce	R F S	O
393	05	MI	Roto-Finish Co., Inc	Kalamazoo	F	O
394	05	MN	Olmsted County Sanitary Landfill	Oronoco	S	
395	07	MO	Quality Plating	Sikeston	R	
396	07	MO	Fulbright Landfill	Springfield	F	I
397	02	NJ	Williams Property	Swainton	R	
398	02	NJ	Renora, Inc	Edison Township	V F	O

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]					Cleanup Status [2]
399	04	NC	FCX, Inc. (Washington Plant)	Washington			F			
400	06	NM	Cleveland Mill	Silver City					D	
			Group 9 (HRS Scores 40.36—38.29)							
401	02	NJ	Denzer & Schafer X-Ray Co.	Bayville	V			S		
402	02	NJ	Hercules, Inc. (Gibbstown Plant)	Gibbstown					D	
403	05	IN	Ninth Avenue Dump	Gary		R				
404	03	MD	Bush Valley Landfill	Abingdon					D	
405	04	SC	Golden Strip Septic Tank Service	Simpsonville					D	
406	06	TX	Texarkana Wood Preserving Co.	Texarkana		R				O
407	06	AR	Gurley Pit	Edmondson			F			O
408	04	FL	Petroleum Products Corp	Pembroke Park	V		F	S		O
409	01	RI	Peterson/Puritan, Inc	Lincoln/Cumberland	V		F			
410	07	MO	Times Beach Site	Times Beach		R				O
411	05	MI	Wash King Laundry	Pleasant Plains Twp		R				
412	05	MN	Whittaker Corp	Minneapolis				S		
413	05	WI	Algoma Municipal Landfill	Algoma		R				
414	05	MN	NL Industries/Tara Corp/Golden	St. Louis Park				S	I	
415	09	CA	Westinghouse Elec (Sunnyvale Plt)	Sunnyvale					D	
416	01	CT	Kellogg-Deering Well Field	Norwalk		R				
417	03	PA	Boarhead Farms	Bridgeton Township					D	
418	01	MA	Cannon Engineering Corp. (CEC)	Bridgewater	V	R	F	S		
419	05	MI	H. Brown Co., Inc	Grand Rapids		R				
420	02	NY	Nepera Chemical Co., Inc	Maybrook	V			S		
421	02	NY	Niagara County Refuse	Wheatfield		R				
422	04	FL	Sherwood Medical Industries	Deland					D	
423	04	AL	Olin Corp. (McIntosh Plant)	McIntosh					D	
424	05	MI	Southwest Ottawa County Landfill	Park Township	V			S		
425	02	NY	Kentucky Avenue Well Field	Horseheads	V	R				O
426	02	NY	Pasley Solvents & Chemicals, Inc	Hempstead	V	R				
427	06	TX	Sol Lynn/Industrial Transformers	Houston	V	R	F	S		I
428	02	NJ	Asbestos Dump	Millington	V		F			
429	04	KY	Lee's Lane Landfill	Louisville	V		F			O
430	06	AR	Frit Industries	Walnut Ridge	V		F			C
431	05	OH	Fultz Landfill	Jackson Township		R				I
432	04	NC	New Hanover Cnty Airport Burn Pit	Wilmington					D	
433	05	OH	Coshocton Landfill	Franklin Township			F			O
434	04	TN	Arlington Blending & Packaging	Arlington		R	F			O
435	06	LA	PAB Oil & Chemical Service, Inc	Abbeville					D	
436	01	RI	Davis (GSR) Landfill	Glocester				S		
437	03	PA	Lord-Shope Landfill	Girard Township	V			S		O
438	10	WA	FMC Corp. (Yakima Pit)	Yakima			F			I
439	05	WI	Northern Engraving Co	Sparta	V		F			
440	06	TX	South Cavalcade Street	Houston	V		F			
441	01	MA	PSC Resources	Palmer				S		O
442	05	MI	Forest Waste Products	Otisville		R	F			
443	03	PA	Drake Chemical	Lock Haven		R	F			O
444	01	NH	Kearsarge Metallurgical Corp	Conway				S		
445	04	SC	Palmetto Wood Preserving	Dixiana		R				O
446	05	IL	Peterson Sand & Gravel	Libertyville		R				
447	05	MI	Clare Water Supply	Clare		R	F			
448	03	PA	Havertown PCP	Haverford	V	R	F			O
449	03	DE	New Castle Spill	New Castle County	V			S		I
450	08	MT	Idaho Pole Co	Bozeman					D	
			Group 10 (HRS Scores 38.2-36.88)							
451	03	DE	NCR Corp. (Millsboro Plant)	Millsboro	V			S		I
452	05	IN	Lake Sandy Jo (M&M Landfill)	Gary		R				
453	05	IL	Johns-Manville Corp	Waukegan			F			
454	05	MI	Chem Central	Wyoming Township				S		
455	05	MI	Novaco Industries	Temperance		R				
456	05	MN	Windom Dump	Windom				S		
457	02	NJ	Jackson Township Landfill	Jackson Township					D	O
458	05	IL	NL Industries/Taracorp Lead Smelt	Granite City	V		F	S		

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]	Cleanup Status [2]
459	04	KY	Red Penn Sanitation Co. Landfill	Peewee Valley	D	
460	05	MI	K&L Avenue Landfill	Oshtemo Township	F	
461	05	OH	TRW, Inc. (Minerva Plant)	Minerva	V S	I
462	10	WA	Kaiser Aluminum Mead Works	Mead	V S	O
463	05	MN	Perham Arsenic Site	Perham	R	O
464	05	MI	Charlevoix Municipal Well	Charlevoix	R	I
465	02	NJ	Montgomery Township Housing Devel.	Montgomery Township	R	
466	02	NJ	Rocky Hill Municipal Well	Rocky Hill Borough	R	
467	92	NJ	Cinnaminson Ground Water Contamin.	Cinnaminson Township	R	
468	02	NY	Brewster Well Field	Putnam County	R	I
469	02	NY	Vestal Water Supply Well 1-1	Vestal	R	I
470	03	PA	Bally Ground Water Contamination	Bally Borough	V F	I
471	04	FL	Wilson Concepts of Florida, Inc	Pompano Beach	D	
472	04	NC	Bypass 601 Ground Water Contamin	Concord	R	I
473	07	MO	Solid State Circuits, Inc	Republic	R F S	O
474	07	NE	Waverly Ground Water Contamin	Waverly	R	O
475	09	CA	Advanced Micro Devices, Inc	Sunnyvale	V S	O
476	10	WA	Hidden Valley Lndfl (Thun Field)	Pierce County	V S	
477	10	WA	Yakima Plating Co	Yakima	D	
478	05	MN	Nutting Truck & Caster Co	Faribault	S	
479	02	NJ	U.S. Radium Corp	Orange	R F	
480	05	MI	Carter Industrials, Inc	Detroit	R	O
481	06	TX	Highlands Acid Pit	Highlands	R	C
482	03	PA	Resin Disposal	Jefferson Borough	V S	O
483	08	MT	Libby Ground Water Contamination	Libby	F	
484	04	KY	Newport Dump	Newport	R	
485	03	PA	Moyers Landfill	Eagleville	R	
486	01	NH	Savage Municipal Water Supply	Milford	F	
487	05	MN	LaGrand Sanitary Lnadfill	LaGrand Township	S	
488	05	IN	Poer Farm	Hancock County	R F	O
489	03	PA	Brown's Battery Breaking	Shoemakersville	V R F	O
490	02	NY	SMS Instruments, Inc	Deer Park	F	
491	05	MI	Hedblum Industries	Oscoda	F	
492	06	TX	United Creosoting Co	Conroe	R F	O
493	02	NY	Byron Barrel & Drum	Byron	R F	O
494	08	WY	Baxter/Union Pacific Tie Treating	Laramie	V F S	O
495	02	NY	Anchor Chemicals	Hicksville	S	
496	05	MI	Waste Management-Mich (Holland)	Holland	S	
497	06	TX	North Cavalcade Street	Houston	R	
498	02	NJ	Sayreville Landfill	Sayreville	D	
499	01	NH	Dover Municipal Landfill	Dover	V R F	
500	02	NY	Ludlow Sand & Gravel	Clayville	V R S	
Group 11 (HRS Scores 36.84—35.57)						
501	05	WI	City Disposal Corp. Landfill	Dunn	F S	
502	02	NJ	Tabernacle Drum Dump	Tabernacle Township	V R F	O
503	07	MO	Minker/Stout/Romaine Creek	Imperial	R	O
504	04	KY	Howe Valley Landfill	Howe Valley	D	
505	01	CT	Yaworski Waste Lagoon	Canterbury	R S	
506	03	WV	Leetown Pesticide	Leetown	V R	O
507	04	FL	Cabot/Koppers	Gainesville	R F S	O
508	02	NJ	Evor Phillips Leasing	Old Bridge Township	R	
509	03	PA	William Dick Lagoons	West Cain Township	V	O
510	05	IN	Douglass Road/Uniroyal, Inc., Lf	Mishawaka	D	
511	03	PA	Lackawanna Refuse	Old Forge Borough	R	O
512	06	OK	Compass Industries (Avery Drive)	Tulsa	R	
513	02	NJ	Mannheim Avenue Dump	Galloway Township	V F	I
514	05	IN	Neal's Dump (Spencer)	Spencer	F S	O
515	02	NY	Fulton Terminals	Fulton	V R	O
516	06	LA	Dutchtown Treatment Plant	Ascension Parish	R	
517	03	PA	Westinghouse Elevator Co. Plant	Gettysburg	V R F	O
518	01	NH	Auburn Road Landfill	Londonderry	R F S	
519	03	WV	Fike Chemical, Inc	Nitro	F	O

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category ¹	Cleanup Status ²
520	05	MN	General Mills/Henkel Corp	Minneapolis	S	
521	04	TN	Wrigley Charcoal Plant	Wrigley	R	O
522	05	OH	Laskin/Poplar Oil Co	Jefferson Township	V R F	O
523	05	OH	Old Mill	Rock Creek	R	O
524	07	KS	John's Sludge Pond	Wichita	V F	O
525	05	WI	Stoughton City Landfill	Stoughton	R	
526	09	CA	Del Norte Pesticide Storage	Crescent City	R	
527	02	NJ	De Rewal Chemical Co	Kingwood Township	F	
528	03	PA	Middletown Air Field	Middletown	V R	O
529	02	NJ	Swope Oil & Chemical Co	Pennsauken	V R F	O
530	04	GA	Monsanto Corp. (Augusta Plant)	Augusta	V S	O
531	01	NH	South Municipal Water Supply Well	Peterborough	V F S	
532	01	ME	Winthrop Landfill	Winthrop	V F S	O
533	03	WV	Ordnance Works Disposal Areas	Morgantown	F	
534	06	AR	Cecil Lindsey	Newport	R	I
535	05	OH	Zanesville Well Field	Zanesville	V S	
536	02	NY	Suffern Village Well Field	Village of Suffern	R	
537	02	NY	Endicott Village Well Field	Village of Endicott	V R	I
538	03	PA	Aladdin Plating	Scott Township	R	I
539	03	PA	North Penn—Area 1	Souderton	R	
540	03	PA	North Penn—Area 7	North Wales	R	
541	03	PA	North Penn—Area 6	Lansdale	R	
542	03	PA	North Penn—Area 5	Montgomery Township	R	
543	04	FL	Harris Corp. (Palm Bay Plant)	Palm Bay	V S	O
544	05	MN	Kummer Sanitary Landfill	Bemidji	R	I
545	05	OH	Sanitary Landfill Co. (IWD)	Dayton	F	
546	05	WI	Eau Claire Municipal Well Field	Eau Claire	R	
547	07	MO	Valley Park TCE	Valley Park	R	I
548	09	CA	San Fernando Valley (Area 4)	Los Angeles	D	
549	09	CA	Monolithic Memories	Sunnyvale	V S	
550	09	CA	National Semiconductor Corp	Santa Clara	V S	

Group 12 (HRS Scores 35.57–34.47)

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category ¹	Cleanup Status ²
551	09	CA	Newmark Ground Water Contamin	San Bernardino	D	
552	04	GA	Powersville Site	Peach County	R F	
553	05	MI	Grand Traverse Overall Supply Co	Greilickville	F	
554	05	MI	Metamora Landfill	Metamora	R	
555	05	MI	Whitehall Municipal Wells	Whitehall	R	
556	03	DE	Standard Chlorine of Delaware, Inc	Delaware City	V S	I
557	05	MN	South Andover Site	Andover	R	O
558	02	NJ	Diamond Alkali Co	Newark	V R F S	O
559	05	IN	Carter Lee Lumber Co.	Indianapolis	D	O
560	01	NH	Fletcher's Paint Works & Storage	Milford	R	O
561	03	VA	Avtex Fibers, Inc.	Front Royal	V F	
562	05	MI	Kentwood Landfill	Kentwood	V F	
563	05	MI	Electrovoice	Buchanan	R	
564	02	NY	Katonah Municipal Well	Town of Bedford	R	O
565	09	CA	Teledyne Semiconductor	Mountain View	D	
566	02	PR	Fibers Public Supply Wells	Jobos	V F	
567	05	IN	Marion (Bragg) Dump	Marion	R	
568	05	OH	Pristine, Inc	Reading	R F	I
569	05	WI	Mid-State Disposal, Inc Landfill	Cleveland Township	R	
570	04	TN	American Creosote (Jackson Plant)	Jackson	R	O
571	08	CO	Broderick Wood Products	Denver	V F	
572	02	NY	C & J Disposal Leasing Co. Dump	Hamilton	D	
573	05	OH	Buckeye Reclamation	St. Clairsville	V F	I
574	02	NY	Preferred Plating Corp	Farmingdale	R	
575	06	TX	Bio-Ecology Systems, Inc	Grand Prairie	R	C
576	08	UT	Monticello Rad Contaminated Props	Monticello	R	I
577	02	NJ	Woodland Route 532 Dump	Woodland Township	V R S	
578	05	IN	American Chemical Service, Inc	Griffith	F	
579	01	MA	Salem Acres	Salem	V	
580	02	NY	Richardson Hill Road Lndfll/Pond	Sidney Center	V R	
581	01	VT	Old Springfield Landfill	Springfield	V F	O
582	02	NY	Solvent Savers	Lincklaen	F	
583	03	VA	U.S. Titanium	Piney River	V F S	O

Appendix B—National Priorities List (by Rank) March 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category[1]					Cleanup Status[2]
584	05	IL	Galesburg/Koppers Co	Galesburg				S		
585	02	NY	Hooker (Hyde Park)	Niagara Falls	V		F	S		
586	05	MI	SCA Independent Landfill	Muskegon Heights				S		
587	02	NY	Action Anodizing, Plating Polish	Copiague					D	
588	09	CA	MGM Brakes	Cloverdale				S		
589	06	LA	Bayou Sorrel Site	Bayou Sorrel			F			I
590	05	MI	Duell & Gardner Landfill	Dalton Township		R				
591	10	WA	Mica Landfill	Mica				S		
592	02	NJ	Ellis Property	Evesham Township		R				O
593	04	KY	Distler Farm	Jefferson County		R	F			O
594	09	CA	Waste Disposal, Inc	Santa Fe Springs					D	
595	10	WA	Harbor Island (Lead)	Seattle			F			
596	05	WI	Lemberger Transport & Recycling	Franklin Township		R				
597	05	OH	E.H. Schilling Landfill	Hamilton Township		R				I
598	05	MI	Cliff/Dow Dump	Marquette			F			
599	02	NY	Clothier Disposal	Town of Granby	V	R				I
600	03	PA	Ambler Asbestos Piles	Ambler	V	R	F	S		O
Group 13 (HRS Scores 34.36—33.62)										
601	10	WA	Queen City Farms	Maple Valley	V		F	S		O
602	02	NJ	Curcio Scrap Metal, Inc	Saddle Brook Twp	V		F			
603	03	VA	L.A. Clarke & Son	Spotsylvania County	V	R	F			
604	05	WI	Scrap Processing Co., Inc	Medford				S		
605	03	MD	Southern Maryland Wood Treating	Hollywood		R				O
606	06	NM	Homestake Mining Co	Milan	V		F			O
607	09	CA	Beckman Instruments (Porterville)	Porterville					D	
608	04	FL	Dubose Oil Products CO	Cantonment				S		O
609	05	MI	Mason County Landfill	Pere Marquette Twp		R	F			
610	05	MI	Cemetery Dump	Rose Center		R				
611	07	IA	Red Oak City Landfill	Red Oak		R				I
612	05	IN	Lakeland Disposal Service, Inc	Claypool					D	
613	02	NJ	Hopkins Farm	Plumstead Township	V			S		
614	04	NC	Cape Fear Wood Preserving	Fayetteville		R				O
615	01	RI	Stamina Mills, Inc	North Smithfield					D	
616	05	WI	Lemberger Landfill, Inc	Whitelaw				S		
617	05	IN	Reilly Tar (Indianapolis Plant)	Indianapolis			F			
618	01	ME	Pinette's Salvage Yard	Washburn		R				O
619	02	NJ	Wilson Farm	Plumstead Township	V	R				
620	02	NY	Conklin Dumps	Conklin					D	
621	03	PA	Old City of York Landfill	Seven Valleys	V		F	S		I
622	03	PA	Modern Sanitation Landfill	Lower Windsor Twp	V			S		I
623	05	IL	Byron Salvage Yard	Byron		R				I
624	05	MI	North Bronson Industrial Area	Bronson		R				
625	03	PA	Stanley Kessler	King of Prussia			F			O
626	02	NJ	Imperial Oil/Champion Chemicals	Morganville		R				
627	02	NJ	Cosden Chemical Coatings Corp	Beverly					D	O
628	05	MN	St. Augusta San Lndfll/Engen Dump	St. Augusta Township				S		
629	02	NJ	Myers Property	Franklin Township	V	R				O
630	02	NJ	Pepe Field	Boonton		R				
631	04	KY	Tri-City Disposal Co	Shepherdsville		R				O
632	10	WA	Northwest Transformer	Everson		R				O
633	02	NY	Genzale Plating Co	Franklin Square		R				
634	05	WI	Sheboygan Harbor & River	Sheboygan			F			
635	05	MI	Ossineke Ground Water Contamin	Ossineke		R				
636	03	WV	Follansbee Site	Follansbee	V		F			I
637	03	PA	Keystone Sanitation Landfill	Union Township				S		O
638	04	NC	Carolina Transformer Co	Fayetteville		R	F			O
639	02	NY	North Sea Municipal Landfill	North Sea	V	R	F			O
640	03	PA	Bendix Flight Systems Division	Bridgewater Township	V			S		O
641	09	CA	Koppers Co Inc (Oroville Plant)	Oroville				S		
642	09	CA	Louisiana-Pacific Corp	Oroville					D	
643	03	VA	H & H Inc., Burn Pit	Farrington		R				
644	05	MI	South Macomb Disposal (Lf 9 & 9A)	Macomb Township			F			
645	05	MI	U.S. Aviex	Howard Township	V		F			
646	03	PA	Walsh Landfill	Honeybrook Township		R	F			O
647	02	NJ	Landfill & Development Co	Mount Holly				S		

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]	Cleanup Status [2]
648	02	NJ	Upper Deerfield Township San Lndf	Upper Deerfield Twp	R F	
649	02	NY	Hertel Landfill	Plattekill	R	
Group 14 (HRS Scores 33.62-32.04)						
650	02	NY	Haviland Complex	Town of Hyde Park	R	
651	02	NY	Melta Rocket Fuel Area	Malta	D	
652	04	GA	Cedartown Municipal Landfill	Cedartown	D	
653	05	MI	Kent City Mobile Home Park	Kent City	F	
654	05	MN	Adrian Municipal Well Field	Adrian	R	
655	06	NM	AT & SF (Clovis)	Clovis	V F	
656	07	KS	Strother Field Industrial Park	Cowley County	V S	O
657	07	KS	Obee Road	Hutchinson	D	
658	02	NJ	Fried Industries	East Brunswick Twp	R	O
659	02	NY	American Thermostat Co	South Cairo	V R S	I
660	08	ND	Minot Landfill	Minot	D	
661	04	TN	Lewisburg Dump	Lewisburg	V	
662	05	MI	McGraw Edison Corp	Albion	V S	
663	02	NY	Goldisc Recordings, Inc	Holbrook	V S	
664	02	NY	Islip Municipal Sanitary Landfill	Islip	V S	
665	04	KY	Airco	Calvert City	V	I
666	03	PA	Metal Banks	Philadelphia	V F	O
667	05	IL	Yeoman Creek Landfill	Waukegan	D	
668	02	NY	Sarney Farm	Amenia	R F	
669	05	MI	Folkertsma Refuse	Grand Rapids	D	
670	01	MA	Rose Disposal Pit	Lanesboro	V F S	
671	05	OH	Van Dale Junkyard	Marietta	F	
672	08	MT	Montana Pole and Treating	Butte	R	I
673	04	KY	B.F. Goodrich	Calvert City	V	I
674	05	MI	Organic Chemicals, Inc	Grandville	S	
675	02	NY	BioClinical Laboratories, Inc	Bohemia	D	
676	02	NY	Volney Municipal Landfill	Town of Volney	V R S	O
677	02	NY	FMC Corp. (Dublin Road Landfill)	Town of Shelby	V S	
678	05	WI	Tomah Fairgrounds	Tomah	R	
679	01	MA	Sullivan's Ledge	New Bedford	R F	
680	04	KY	Smith's Farm	Brooks	R	O
681	10	OR	Joseph Forest Products	Joseph	D	
682	02	PR	Juncos Landfill	Juncos	V F	O
683	07	KS	Big River Sand Co	Wichita	R	I
684	05	IN	Bennett Stone Quarry	Bloomington	V F	O
685	10	WA	Wyckoff Co./Eagle Harbor	Bainbridge Island	F	
686	02	NJ	Industrial Latex Corp	Wallington Borough	R	O
687	04	FL	Munisport Landfill	North Miami	F	
688	04	AL	Stauffer Chem (LeMoyne Plant)	Axis	V	
689	02	NJ	M&T Delisa Landfill	Asbury Park	V F	
690	06	TX	Crystal City Airport	Crystal City	R	O
691	04	SC	Geiger (C & M Oil)	Rantoules	R	
692	05	WI	Moss-American (Kerr-McGee Oil Co.).	Milwaukee	R F	
693	05	WI	Waste Research & Reclamation Co	Eau Claire	S	
694	10	OR	Gould, Inc	Portland	V F	
695	02	NY	Cortese Landfill	Vil of Narrowsburg	V S	
696	05	MN	St. Louis River Site	St. Louis County	R	I
697	05	MI	Auto Ion Chemicals, Inc	Kalamazoo	V F	O
698	05	WI	Hagen Farm	Stoughton	S	
699	04	SC	Carolawn, Inc	Fort Lawn	V R F	O
700	07	IA	Midwest Manufacturing/North Farm	Kellogg	R	I
Group 15 (HRS Scores 32.02-31.02)						
701	03	PA	Berks Sand Pit	Longswamp Township	R	O
702	09	CA	Valley Wood Preserving, Inc	Turlock	V S	
703	03	PA	Butz Landfill	Stroudsburg	D	
704	05	MI	Sparta Landfill	Sparta Township	S	
705	05	IL	Acme Solvent (Morristown Plant)	Morristown	V R	I
706	01	NH	Holton Circle Ground Water Contam	Londonderry	D	

Appendix B—National Priorities List (by Rank) March 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category[1]					Cleanup Status[2]
707	02	NJ	Pomona Oaks Residential Wells	Galloway Township		R				O
708	02	NY	Rowe Industries Ground Water Cont	Noyack/Sag Harbor	V	R	F			O
709	03	PA	Hebelka Auto Salvage Yard	Weisenberg Township		R				
710	04	FL	Hipps Road Landfill	Duval County	V	R	F			O
711	05	MN	Long Prairie Ground Water Contam	Long Prairie		R				
712	05	MN	Waite Park Wells	Waite Park		R				
713	09	CA	Applied Materials	Santa Clara	V			S		O
714	09	CA	Intel Magnetics	Santa Clara	V			S		
715	09	CA	Intel Corp. (Santa Clara III)	Santa Clara	V			S		I
716	04	FL	Pepper Steel & Alloys, Inc	Medley		R	F			O
717	02	NY	Mattiace Petrochemical Co., Inc	Glen Cove		R				O
718	01	ME	O'Connor Co	Augusta	V	R				
719	05	WI	Oconomowoc Electroplating Co. Inc	Ashippin		R				
720	05	IN	Continental Steel Corp	Kokomo					D	
721	05	MI	Rasmussen's Dump	Green Oak Township		R				O
722	02	NY	Kenmark Textile Corp	Farmingdale	V			S		I
723	03	PA	Westline Site	Westline		R				O
724	04	KY	Maxey Flats Nuclear Disposal	Hillsboro	V	R	F	S		
725	08	MT	Mouat Industries	Columbus					D	
726	05	MI	J&L Landfill	Rochester Hills		R				
727	02	NY	Claremont Polychemical	Old Bethpage	V			S		
728	05	OH	Powell Road Landfill	Dayton		R				I
729	03	PA	Croydon TCE	Croydon		R				
730	04	SC	Medley Farm Drum Dump	Gaffney	V	R	F			O
731	04	SC	Elmore Waste Disposal	Greer		R				O
732	07	IA	Vogel Paint & Wax Co	Orange City				S		I
733	05	MN	Kurt Manufacturing Co	Fridley				S		
734	05	MI	Parsons Chemical Works, Inc	Grand Ledge					D	
735	03	PA	Revere Chemical Co	Nockamixon Township		R				O
736	05	MI	Ionia City Landfill	Ionia	V		F			I
737	06	TX	Koppers Co Inc (Texarkana Plant)	Texarkana	V		F			
738	08	CO	Lincoln Park	Canon City			F			
739	08	CO	Smuggler Mountain	Pitkin County	V		F			
740	05	IN	Wedzeb Enterprises, Inc	Lebanon			F	S		I
741	02	PR	GE Wiring Devices	Juana Diaz	V		F			
742	05	MI	Avenue "E" Ground Water Contamin	Traverse City				S		
743	05	OH	New Lyme Landfill	New Lyme		R				
744	02	NJ	Woodland Route 72 Dump	Woodland Township	V	R		S		
745	02	PR	RCA Del Caribe	Barceloneta	V		F			
746	05	MN	Koch Refining Co./N-Ren Corp	Pine Bend	V			S		
747	03	PA	Brodhead Creek	Stroudsburg	V	R	F	S		O
748	05	WI	Fadrowski Drum Disposal	Franklin			F			
749	10	OR	United Chrome Products, Inc	Corvallis		R				O
750	05	MI	Anderson Development Co	Adrian		R				
Group 16 (HRS Scores 31.02-29.78)										
751	05	WI	Hunts Disposal Landfill	Caledonia			F			
752	05	MI	Shiawassee River	Howell		R				
753	06	OK	Tenth Street Dump/Junkyard	Oklahoma City		R	F			O
754	10	AK	Alaska Battery Enterprises	Fairbanks N Star Bor		R				I
755	03	PA	Taylor Borough Dump	Taylor Borough		R	F			C
756	03	DE	Halby Chemical Co	New Castle		R	F			
757	06	OK	Double Eagle Refinery Co	Oklahoma City					D	
758	04	GA	Mathis Bros Lf (S Marble Top Rd)	Kensington					D	
759	03	DE	Harvey & Knott Drum, Inc	Kirkwood	V	R				O
760	04	TN	Gallaway Pits	Gallaway		R	F			O
761	05	OH	Big D Campground	Kingsville			F			
762	06	AR	Midland Products	Ola/Birta		R				I
763	02	NY	Robintech, Inc./National Pipe Co	Town of Vestal	V	R	F			
764	02	NY	BEC Trucking	Town of Vestal			F			
765	03	PA	Strasburg Landfill	Newlin Township				S		O
766	06	OK	Fourth Street Abandoned Refinery	Oklahoma City					D	
767	05	WI	Tomah Armory	Tomah		R				
768	03	DE	Wildcat Landfill	Dover		R				
769	05	MI	Burrows Sanitation	Hartford	V	R				O
770	03	PA	Blosenski Landfill	West Cain Township		R	F			I

APPENDIX B—NATIONAL PRIORITIES LIST (BY RANK) MARCH 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]	Cleanup Status [2]
771	03	VA	Rhinehart Tire Fire Dump	Frederick County	V R F	O
772	03	DE	Delaware City PVC Plant	Delaware City	V F	I
773	03	MD	Limestone Road	Cumberland	V R	O
774	02	NY	Hooker (102nd Street)	Niagara Falls	V F S	
775	02	NJ	Higgins Farm	Franklin Township	R	O
776	06	NM	United Nuclear Corp	Church Rock	V F	I
777	03	PA	Reeser's Landfill	Upper Macungie Twp	R	
778	03	VA	Rentokil, Inc. (VA Wood Pres Div)	Richmond	V F	
779	06	AR	Industrial Waste Control	Fort Smith	F	
780	09	CA	Celtor Chemical Works	Hoopa	R	O
781	01	MA	Haverhill Municipal Landfill	Haverhill	D	
782	04	AL	Perdido Ground Water Contamin	Perdido	V	O
783	02	NY	Marathon Battery Corp	Cold Springs	R	
784	02	NY	Colesville Municipal Landfill	Town of Colesville	V S	O
785	04	FL	Yellow Water Road Dump	Baldwin	V R F	O
786	05	OH	Skinner Landfill	West Chester	R	I
787	03	VA	First Piedmont Quarry (Route 719)	Pittsylvania County	D	
788	04	NC	Chemtronics, Inc	Swannanoa	V R F	
789	05	IN	MIDCO II	Gary	V R F	O
790	06	TX	Sheridan Disposal Services	Hempstead	V F	O
791	07	KS	Pester Refinery Co	El Dorado	S	
792	03	MD	Kane & Lombard Street Drums	Baltimore	R	O
793	07	MO	Shenandoah Stables	Moscow Mills	F	I
794	07	IA	Shaw Avenue Dump	Charles City	V	I
795	03	PA	Berkley Products Co. Dump	Denver	D	
796	10	WA	Silver Mountain Mine	Loomis	R	O
797	06	TX	Petro-Chemical (Turtle Bayou)	Liberty County	R	I
798	05	OH	Republic Steel Corp. Quarry	Elyria	F	
799	05	MN	Ritari Post & Pole	Sebeka	R	
800	06	LA	Bayou Bonfouca	Slidell	R F	I
Group 17 (HRS Scores 29.76–28.50, except for health-advisory sites)						
801	09	CA	Intel Corp. (Mountain View Plant)	Mountain View	V F	
802	09	CA	Raytheon Corp	Mountain View	F	I
803	05	MN	Agate Lake Scrapyard	Fairview Township	R	O
804	05	MI	Adam's Pleting	Lansing	D	
805	06	AR	Jacksonville Municipal Landfill	Jacksonville	R	
806	06	AR	Rogers Road Municipal Landfill	Jacksonville	R	
807	03	VA	Saltville Waste Disposal Ponds	Saltville	V R S	O
808	04	SC	Palmetto Recycling, Inc	Columbia	S	O
809	01	MA	Shpack Landfill	Norton/Attleboro	D	
810	03	PA	Kimberton Site	Kimberton Borough	V S	O
811	01	MA	Norwood PCBs	Norwood	R	O
812	02	NY	Warwick Landfill	Warwick	D	
813	02	NY	Sidney Landfill	Sidney	D	
814	10	WA	Pesticide Lab (Yakima)	Yakima	D	
815	05	IN	Lemon Lane Landfill	Bloomington	V F	I
816	05	IN	Tri-State Plating	Columbus	R	
817	10	ID	Arrcom (Drexler Enterprises)	Rathdrum	R	I
818	01	NH	Coakley Landfill	North Hampton	V R S	O
819	04	NC	Potter's Septic Tank Service Pits	Maco	R	O
820	04	NC	ABC One Hour Cleaners	Jacksonville	D	
821	03	PA	Fischer & Porter Co	Warminster	V F	O
822	03	PA	Elizabethtown Landfill	Elizabethtown	D	O
823	06	AR	Arkwood, Inc	Omaha	V F S	O
824	09	CA	Jibboom Junkyard	Sacramento	R	C
825	02	NJ	A.O. Polymer	Sparta Township	R	
826	05	WI	Wausau Ground Water Contamination.	Wausau	R	O
827	02	NJ	Dover Municipal Well 4	Dover Township	R	
828	02	NJ	Rockaway Township Wells	Rockaway	D	O
829	02	NJ	Pohatcong Valley Ground Water Con	Warren County	D	
830	02	NJ	Garden State Cleaners Co	Minotola	D	
831	05	WI	Delavan Municipal Well #4	Delavan	S	
832	07	MO	North-U Drive Well Contamination	Springfield	R	O
833	09	CA	San Gabriel Valley (Area 3)	Alhambra	R	

Appendix B—National Priorities List (by Rank) March 1989—Continued

NPL Rank	EPA Reg	St	Site Name	City/County	Response Category [1]					Cleanup Status [2]
834	09	CA	San Gabriel Valley (Area 4)	La Puente		R				
835	09	CA	Modesto Ground Water Contamin	Modesto					D	
836	10	WA	American Lake Gardens	Tacoma	V	R	F			I
837	10	WA	Greenacres Landfill	Spokane County	V	R				
838	10	WA	Northside Landfill	Spokane	V	R	F			O
839	06	OK	Sand Springs Petrochemical Cmplx	Sand Springs		R	F			O
840	06	TX	Pesses Chemical Co	Fort Worth		R	F			O
841	05	MN	East Bethel Demolition Landfill	East Bethel Township				S		
842	06	TX	Triangle Chemical Co	Bridge City		R				O
843	02	NJ	PJP Landfill	Jersey City		R		S		O
844	03	PA	Craig Farm Drum	Parker	V			S		O
845	05	IL	Belvidere Municipal Landfill	Belvidere		R				I
846	07	MO	Bee Cee Manufacturing Co	Malden		R				
847	02	NJ	Kauffman & Minteer, Inc	Jobstown					D	
848	03	PA	Lansdowne Radiation Site	Lansdowne		R				O

Number of NPL Sites: **848**.

* = State top priority site.

[1] V=Voluntary or negotiated response R=Federal and State response. F=Federal enforcement S=State enforcement. D=Category to be determined.

[2] I=Implementation activity underway, one or more operable units O=One or more operable units completed; others may be underway C=Implementation activity completed for all operable units.

[54 FR 13305, Mar. 31, 1989, as amended at 54 FR 23212, May 31, 1989]

APPENDIX C TO PART 300—REVISED STANDARD DISPERSANT EFFECTIVENESS AND TOXICITY TESTS

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3 Preparation of Standards for Calibration
4 Required Dispersant Effectiveness Tests Results
5 Synthetic Seawater (Toxicity Test)
6 Test Oil Characteristics: No. 2 Fuel Oil

1.0 Introduction

1.1 *Scope and Application.* These methods apply to "dispersants," involving Subpart H (Use of Dispersants and Other Chemicals) in 40 CFR Part 300 (National Oil and Hazardous Substances Pollution Contingency Plan). They are revisions to the EPA's Standard Dispersant Effectiveness and Toxicity Tests (1). Note that the toxicity test is also used for collecting agents and other chemicals.

1.2 *Definition.* Dispersants are defined as those chemical agents that emulsify, disperse, or solubilized oil into the water column or act to further the surface spreading of oil slicks in order to facilitate dispersal of oil into the water column.

2.0 Revised Standard Dispersant Effectiveness Test

2.1 *Summary of Method.* The test oil (100 ml) is applied to the surface of synthetic seawater contained in a cylindrical tank. The dispersant (3, 5, or 25 ml) is applied to the oil in a fine stream, and 3.0 minutes are allowed for the dispersant to contact the oil. The oil, dispersant, and seawater are mixed by hosing with a pressurized water stream for 1.0 minute. The contents of the tank are recirculated by a pump, and samples are withdrawn from the recirculation system after 10 minutes and after 2 hours of recirculation. The amount of oil dispersed is determined by measuring the absorbance of visible light after extraction of the dispersed oil with chloroform. Each test is repeated three times.

2.2 *Apparatus. Test Tank.* Construct the cylindrical test tank, 24 inches (600 mm) inside diameter by 28 inches (710 mm) high, of 16-gauge stainless steel. Install, as shown in Figure 1, the associated piping, valve, and pump for recirculation of dispersed oil and for sample collection.

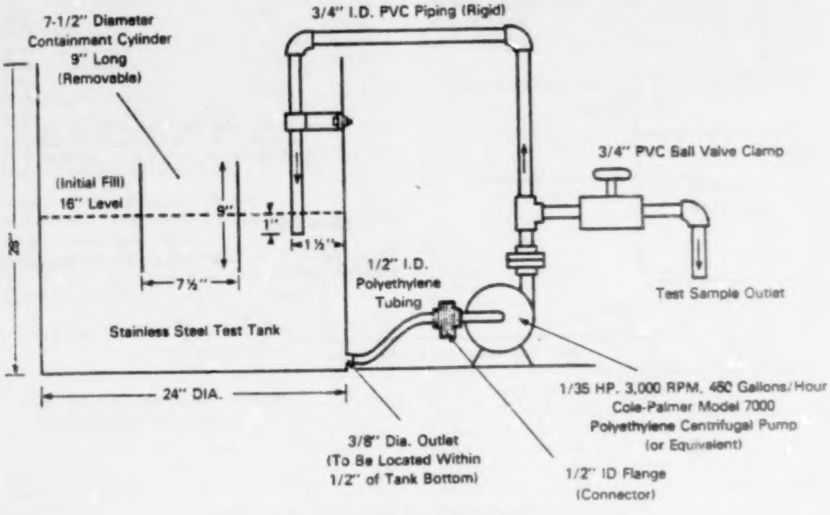

7-1/2" Diameter Containment Cylinder 9" Long (Removable)
3/4" I.D. PVC Piping (Rigid)
3/4" PVC Ball Valve Clamp
(Initial Fill) 16" Level
9"
1"
1½"
28"
7½"
1/2" I.D. Polyethylene Tubing
Test Sample Outlet
Stainless Steel Test Tank
24" DIA.
1/35 HP. 3,000 RPM. 450 Gallons/Hour Cole-Palmer Model 7000 Polyethylene Centrifugal Pump (or Equivalent)
3/8" Dia. Outlet (To Be Located Within 1/2" of Tank Bottom)
1/2" ID Flange (Connector)

Figure 1. Test Tank

Oil Containment Cylinder. Use a 16-gauge stainless steel containment cylinder 7.5 inches (190 mm) in diameter and 9 inches (229 mm) long to contain the oil while the oil contacts the dispersant. Suspend the cylinder vertically in the center of the test tank with its midpoint 16 inches (406 mm) above the base of the tank. The design should be such that the cylinder can be removed from the tank in less than 10 seconds.

Hosing System. Provide a pressurized hosing system suitable for delivering synthetic seawater to the oil/dispersant mixture in the test tank. A suggested hosing system is shown in Figure 2. Deliver hosing water through a hose with a ½-inch (12.7 mm) inside diameter, which is connected to a shut-off nozzle with a discharge tip approximately with a 3/16-inch (4.8-mm) inside diameter [Akron Brass Company, Style 111 shutoff valve with Style 558, 3/16-inch tip, or equivalent].

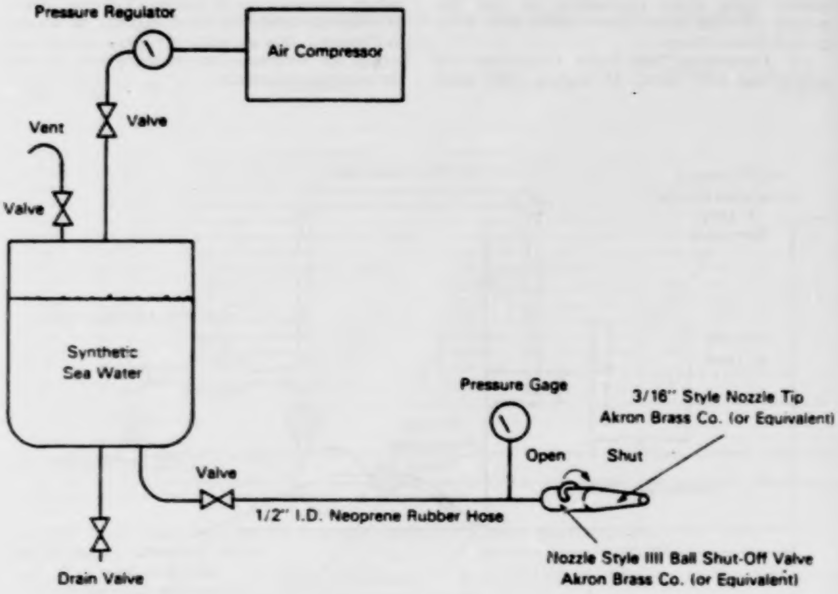

Pressure Regulator
Air Compressor
Vent
Valve
Valve
Synthetic Sea Water
Pressure Gage
3/16" Style Nozzle Tip
Akron Brass Co. (or Equivalent)
Open
Shut
Valve
1/2" I.D. Neoprene Rubber Hose
Drain Valve
Nozzle Style IIII Ball Shut-Off Valve
Akron Brass Co. (or Equivalent)

Figure 2. Suggested Hosing System

The hosing system must be adjusted to deliver 15.1±0.8 liters/min at 140 kPa (4.0±0.2 gpm at 20 psig). Measure the flow by hosing synthetic seawater at 23±1°C into a calibrated container for the predetermined time. Set the proper flow rate by adjusting the pressure in the pressurized tank or a suitable valve in the hose line. The delivery pressure should be determined by means of a pressure gauge in the line immediately before the nozzle.

Corrosion buildup within the nozzle may change hosing pressure and alter test results. To prevent this, remove and flush the nozzle with fresh water at the end of each day's tests.

Spectrophotometer. Use a spectrophotometer suitable for measurement at 620 nanometers to determine photochemically the oil concentration of the oil/chloroform mixture. A Bausch and Lomb Spectronic 20 spectrophotometer (or equivalent) is acceptable for this purpose.

Filter Paper. Use a filter paper suitable for filtering the oil/chloroform extract. Whatman No. 1 filter paper (or equivalent) is acceptable for this purpose.

Glassware. Glassware should consist of 5-, 10-, 25-, 100-, and 500-ml graduated cylinders; two 1,000-ml separatory funnels with Teflon stopcocks; 10-, 100-, and 1,000-ml volumetric flasks and two 250-ml Erlenmeyer flasks.

2.3 *Reagents. Synthetic Seawater.* Prepare a batch of concentrated synthetic seawater using the components listed in Table 1, which are added to 379 liters (100 gal) of tap water having a hardness less than 50 mg/liter.

TABLE 1—SYNTHETIC SEAWATER (EFFECTIVENESS TEST)

Salt [a]	Composition	
	Concentrate [b] (kg/379 liter)	Diluted seawater (g/liter)
NaCl	20.25	17.10
$MgCl_2 \cdot 6H_2O$	9.17	7.44
Na_2SO_4	3.38	2.85
$CaCl_2$	0.952	0.802
KCl	0.573	0.483
$NaHCO_3$	0.166	0.140

[a] If any salt other than those listed above is used, allowance must be made for water of crystallization.

[b] Concentrate is prepared by dissolving the indicated amount of salt in 379 liters (100 gal.) of tap water.

Chloroform Reagent Grade.

Sodium Sulfate, Anhydrous Reagent Grade.

Oils. Test the dispersant with 100 ml of No. 6 fuel oil that has the characteristics given in Table 2.

TABLE 2—TEST OIL CHARACTERISTICS: NO. 6 FUEL OIL

Characteristics	No. 6 fuel oil	
	Minimum	Maximum
Gravity (°API)		16.9
Viscosity—Furol at 122°F (SFS)	101	200
Flash Point (°F)	160	
Pour Point (°F)		35
Sulfur (wt %)		2.73
Carbon residue (wt %)		12.3
Water (vol %)		0.20
Sediment (wt %)		0.10
Ash (wt %)		0.10
Asphaltenes (wt %)		10.0
Neutralization No		2.5

2.4 *Pretest Preparation. Calibration of Spectrophotometer.* Prepare a stock solution by adding 3.50 g of the test oil to a 1,000-ml volumetric flask. Dissolve the oil in about 900 ml of chloroform, then dilute to the mark with choloroform. The resulting concentration of test oil is 3,500 mg/liter.

Prepare standard solutions of No. 6 fuel oil by pipetting 5, 10, 25, and 50 ml of the test oil stock solution into 10-ml volumetric flasks. Dilute each flask to the mark with chloroform. The concentration of test oil in each flask is given in Table 3:

TABLE 3—PREPARATION OF STANDARDS FOR CALIBRATION

Volume of stock solution used (ml)	Concentration of test oil (mg/liter)
5	175
10	350
25	875
50	1,750
100 (neat)	3,500

Determine the absorbance of the stock solution and the diluted aliquots at a wavelength of 620 nanometers. If a Bausch and Lomb Spectronic 20 spectrophotometer is used, the ½-inch (12.7-mm) cell is recommended. Plot the calibration curve for the test oil as mg/liter of test oil versus absorbance.

Measurement of Specific Gravity of the Test Oils and Dispersant. Equilibrate samples of the test oil and dispersant at 23±1 ° C

Weigh two dry 10-ml volumetric flasks on a balance capable of weighing to ±1 mg or better. Add enough test oil to one flask and enough dispersant to the second flask to fill them to the mark. Reweigh each flask. The density of the oil and dispersant is:

$$\text{Density (g/ml)} = \frac{\text{Weight of test oil or dispersant (g)}}{\text{volume of the flask (ml)}} \qquad (1)$$

2.5 *Dispersant Effectiveness Test Procedure.* The dispersant effectiveness test procedures are as follows in steps 1-16:

1. Add 38±1 liters (10±0.25 gal) of the seawater concentrate to the test tank. Dilute the concentrate to a depth of 16±0.25 inches (410±5 mm) with hot and cold water in the proper amounts to bring the temperature of the diluted seawater to 23±1° C. Adjust the pH of the seawater to 8.0±0.1 with concentrated HC1 or NaOH. The salinity of the water should be 25.00±0.15 parts per thousand (ppt).

2. Insert the oil containment cylinder into the test tank. Position the cylinder in the center of the tank with its midpoint 16±0.25 inches (410±5 mm) above the base of the tank.

3. Select one of the following graduated cylinders, a 5-, 10-, or 25-ml graduated cylinder, as appropriate for addition of the dispersant and a 100-ml graduated cylinder for addition of the test oil.

4. Fill the 100-ml graduated cylinder with 100 ml of the test oil. Drain the Cylinder for 3.0 minutes. Weigh the drained cylinder and record the weight. Calculate the weight of 100 ml of test oil [weight (g) = density (g/ml) × volume (ml)] and add this amount of test oil to the drained cylinder. Record the weight of the cylinder and oil.

NOTE: The precision of the effectiveness test is increased substantially if exactly the same weight of test oil or dispersant is added for each test. The purpose of Step 4 is to determine the amount of test oil or dispersant that will be left in the graduated cylinder after the addition.

5. Slowly and gently add the 100 ml of the test oil from the graduated cylinder directly onto the water surface within the center of the oil containment cylinder. Move the graduated cylinder in a circular motion to distribute the oil uniformly over the surface. Be careful that oil is not lost below the containment cylinder and that oil does not splash, drip onto, or contact the containment cylinder wall above the waterline during application.

Allow the oil to drain from the graduated cylinder for 3.0 minutes.

Weigh the drained graduated cylinder. Calculate the weight of oil actually added to the test tank. Check the weight to be sure that 100.0 ± 0.5 ml of test oil was added to the test tank.

6. Fill either the 5-, 10-, or 25-ml graduated cylinder with 3, 10, or 25 ml of dispersant, respectively. Drain it for 3.0 minutes and weigh the drained cylinder. Calculate the weight of 3, 10, or 25 ml of dispersant required [weight (g) = density (g/ml) × volume (ml)] and add this amount of dispersant to the drained cylinder. Record the weight of the cylinder and dispersant.

7. From the graduated cylinder gently add the dispersant at 23±1°C onto the oil surface within the containment cylinder. Move the graduated cylinder in a circular motion to distribute the dispersant uniformly over the surface. Carefully apply the dispersant onto the oil surface only and not through the oil surface or onto the containment cylinder walls. Allow the dispersant to drain from the graduated cylinder for 3.0 minutes.

Weigh the drained graduated cylinder. Calculate the weight of dispersant added to the test tank. Check the weight to be sure that the correct volume of dispersant, ± 3 percent, was added to the test tank.

8. Activate the hosing system, adjust nozzle pressure to 140 kPa, and apply a stream of synthetic seawater at 23±1°C to the oil/dispersant mixture within the containment cylinder. Immediately lift the cylinder all the way out above the water surface and simultaneously hose off any oil adhering to the cylinder's inner surface. Remove the cylinder completely and continue to hose and agitate the oil/dispersant mixture for a total hosing period of 1.0 minute. The flow rate of hosing nozzle must be 15.1±0.8 liters/min at 140 kPa (4.0±0.2 gpm at 20 psig).

NOTE: (1) Removing the containment cylinder must take no longer than 10 seconds. (2) To hose the oil/dispersant mixture, hold the discharge tip of the nozzle approximately level with the top edge of the test tank and pointed vertically downward. Move the nozzle rapidly in a random manner from side to side, backwards and forwards, and around the inner wall of the tank, as necessary, to facilitate continuous hosing and agitation of the entire oil/dispersant surface.

9. Immediately after hosing, start the recirculation pump and continue recirculation for 2.0 hours.

10. After 10.0 minutes of recirculation, withdraw a 500-ml sample into a 500-ml graduated cylinder and discard. Immediately collect another 500-ml sample for determining "initial dispersion."

11. After 2.0 hours of recirculation, withdraw a 500-ml sample into a 500-ml graduated cylinder and discard. Immediately collect another 500-ml sample for determining "final dispersion."

12. Transfer the 500-ml sample to a 1,000-ml separatory funnel. Add 25 ml of chloroform to the separatory funnel, stopper the funnel, and shake vigorously for 50 strokes. After shaking, place the funnel in a rack, vent, and allow a setting time of 2 to 3 minutes.

After the settling period, lift the funnel from the rack and gently invert it several times. While holding the funnel, allow the contents to settle and then gently swirl with a circular motion to afford additional settling of the oil/chloroform mixture. Transfer the oil/chloroform mixture to a 250-ml Erlenmeyer flask that contains anhydrous Na_2SO_4 for drying the extract.

Repeat the extractions using a total of at least three 25-ml portions of chloroform.

After the oil extraction is complete, filter the combined extracts from the Erlenmeyer flask through dry filter paper into an appropriate volumetric flask (100 ml, 250 ml, or 500 ml depending on the amount of chloroform used to complete the extraction).

Rinse the Na_2SO_4 and filter paper with small portions of chloroform to remove entrained oil. After removing, fill the volumetric flask to the mark with chloroform, invert and thoroughly mix contents.

13. Spectrophotometrically determine the absorbance of the extract using the identical wavelength and cell used to calibrate the spectrophotometer. From the calibration curve, determine the concentration of oil in the chloroform.

Compute the concentration of oil in the sample as follows:

$$C_{do}=\frac{C_1 \times (\text{volume of sample})}{(\text{volume of chloroform used})} \qquad (2)$$

where:

C_{do} is the concentration of dispersed oil in the sample and

C_1 is the measured concentration of oil in the chloroform extract.

Note that the standard sample volume is 500 ml and the volume of chloroform used should also be expressed in ml.

Repeat Steps 1 through 13 at least three times for each of the three required volumes of dispersant.

2.6 *Blank Correction Determination.*

14. Clean the test tank and prepare the synthetic seawater at 23±1°C as described in Step 1. Do not install the containment cylinder and do not use any test oil. Add 25 ml of the dispersant to the tank as described in Steps 6 and 7 and continue the test procedure as described in Steps 8 through 12.

15. Spectrophotometrically determine the absorbance of the extract using the identical wavelength and cell used to calibrate the spectrophotometer. From the calibration curve, determine the corresponding concentration of oil in the chloroform. Compute the dispersant blank correction for 25 ml of dispersant as follows:

$$D=\frac{C_2 \times (\text{volume of sample})}{(\text{volume of chloroform used})} \qquad (3)$$

where:

D is the blank correction for 25 ml of dispersant, and

C_2 is the measured concentration of oil in the chloroform extract:

Note that the standard sample volume is 500 ml and the volume of chloroform used should also be expressed in ml. The Dispersant Blank Correction (DBC) for other volumes of dispersant used in a test may then be computed as:

$$DBC=\frac{D \times (\text{volume in ml of dispersants used})}{25 \text{ ml}} \qquad (4)$$

16. Clean the test tank and prepare the synthetic seawater at 23±1°C as described in Step 1. Do not install the containment cylinder. Prepare 100 ml of test oil as described in Steps 4 and 5, and add it to the test tank. Continue the test procedure as described in Steps 8 through 13. The Oil Blank Correction (OBC) is:

$$OBC=\frac{C_1 \times (\text{volume of sample})}{(\text{volume of chloroform used})} \qquad (5)$$

2.7 *Calculations.* The concentrations of test oil equivalent to 100 percent dispersion is:

$$C_{100}=\frac{(\text{weight of test oil})}{(133.6 \text{ liter synthetic seawater})} \qquad (6)$$

The weight of the test oil should be expressed in milligrams, so that resulting C_{100} will be in mg/liter.

The percent of oil dispersed is then:

Percent dispersed =

$$\frac{(C_{do}-OBC-DBC)}{C_{100}} \times 100\% \qquad (7)$$

2.8 *Report of the Effectiveness Test Results.* Based on 100 ml of oil, determine the percent dispersion of the test oil caused by 3, 10, and 25 ml of dispersant: (a) after 10 minutes recirculation ("initial dispersion") and (b) after 2 hours recirculation ("final dispersion").

Determine the mean of at least three replicate tests for each of the three dispersant dosages. If the percent dispersion value found (after the 10-minute recirculation period only) for any of the three replicate tests varies from the mean value by more than ±8 percent, discard that result and run another replicate.

For each test oil, using percent dispersion as the ordinate and dispersant dosage (ml) as the abscissa, plot two curves on one chart, one for "initial dispersion" and the other for "final dispersion." Draw the graphs by plotting mean percent dispersion values for each of the dispersant dosages of 3, 10, and 25 ml and connecting the corresponding data points for each sampling time (10 minutes or 2 hours) with straight lines. From the "initial dispersion" graph, determine the dispersant dosage (ml) causing 50 percent dispersion. From the "final dispersion" graph, determine the dispersant dosage (ml) causing 25 percent dispersion.

Report the data in the format given in Table 4.

TABLE 4—REQUIRED DISPERSANT EFFECTIVENESS TESTS RESULTS

Volume Dispersant (ml)	Initial Dispersion (10 minutes)		Final Dispersion (2 hours)	
	Percent dispersion for Replicate Number	Mean Percent Dispersion	Percent Dispersion for Replicate Number	Mean Percent Dispersion
3	1— 2— 3—	——	1— 2— 3—	——
10	1— 2— 3—	——	1— 2— 3—	——
25	1— 2— 3—	——	1— 2 3—	——
	Dosage (ml) causing 50 percent dispersion (from "initial dispersion" graph) ——ml.		Dosage (ml) causing 25 percent dispersion (from "final dispersion" graph) —— ml.	

2.9 *Comments on Revisions to Dispersant Effectiveness Tests.* The comments discussed here refer only to these revisions to the dispersant effectiveness test described by McCarthy et al. (1).

Addition to Test Oil and Dispersant. Rewick et al. (2), (3), found that the method described in the revised method for adding the same amount of test oil and dispersant significantly improved the precision of the test. The percent standard deviation of the initial and final amount of oil dispersed was determined for dispersant C, E, and F using the method described in McCarthy et al. (1). The data for dispersants A, B, and D were obtained using the weighing method for the oil and dispersant described in the revised procedure. The average percent standard deviation was reduced from 41.6 percent to 4.9 percent for No. 6 fuel oil. Additional testing of dispersants on EPA's NCP Product Schedule recently has been initiated to determine the precision of the Revised Standard Dispersant Effectiveness Test Procedures.

Inclusion of the Oil Blank. Rewick et al. (2) found that the optical density of the oil blank was significantly higher than the dispersant blank. Including an oil blank increased the accuracy of the test because it corrects for the light absorption of the water-soluble components of the fuel (amount of test oil dispersed into the water column in the absence of a dispersant is low).

Dispersant-to-Oil Ratio. The maximum effectiveness of many dispersants occurs at dispersant-to-oil (D/O) ratios of less than 0.10 or 0.25 (10 or 25 ml dispersant) (see Figure 1, Rewick et al. (3)). Furthermore, the manufacturer's recommended application rates are usually less than D/O=0.10, and the actual application rates in a real spill may be less than a D/O=0.10 specifically when applied by aircraft. Therefore, the revised method specifies testing the dispersants at D/O=0.03, 0.10, and 0.25.

3.0 Revised Standard Dispersant Toxicity Test

3.1 ***Summary of Method.*** The standard toxicity test for dispersants involves exposing two species (***Fundulus heteroclitus*** and ***Artemia salina***) to five concentrations of the test dispersant and No. 2 fuel oil alone and in a 1:10 mixture of dispersant to oil. To aid in comparing results from assays performed by different workers, reference toxicity tests are conducted using dodecyl sodium sulfate as a reference toxicant. The test length is 96 hours for ***Fundulus*** and 48 hours for ***Artemia***. LC50s are calculated based on mortality date at the end of the exposure period (for method of calculation, see section 3.6 of this appendix).

3.2 *Selection and Preparation of test Materials. Test Organisms. Fundulus heteroclitus.* Obtain test fish from a single source for each series of toxicity tests. Report any known unusual condition to which fish were exposed before use (e.g., pesticides or chemotherapeutic agents); avoid if possible. Use small fish 2.5 to 3.8 cm (1 to 1.5 inches) in length and weighing about 1 gram. The longest individual fish should be no more than 1.5 times the length of the smallest.

Acclimate test fish to a temperature of 20±1°C, a pH of 8.0±0.2, and 20 ± 2ppt salinity for 10 to 14 days before using them for the toxicity tests. Eliminate groups of fish having more than 20 percent mortality during the first 48 hours, and more than five percent thereafter. During acclimation, feed all species a balanced diet. Dry, pelleted, commercially available fishfood containing 30 percent to 45 percent protein is satisfactory. The pellets should be easily consumable by the test fish. Feed the fish twice daily to satiation, but not for 24 hours before or during the bioassay test. Use only those organisms that feed actively and appear to be healthy. Discard any fish injured or dropped while handling.

Artemia Salina. To ensure uniformity of *Artemia* (brine shrimp), use eggs from the San Francisco Bay area. Since the eggs of *Artemia* may be kept disiccated for long periods in a viable state, required numbers of the organism can be secured at any time for use in the bioassay tests through the use of proper hatching procedures.

A rectangular tray (plastic, glass, or enamel) having 200 square inches of bottom surface is suitable for hatching *Artemia* eggs. Divide this tray into two parts by a partition that extends from the top down to about 1.9 to 1.3 cm (0.75 to 0.5 inch) from the bottom. This partition may be of any opaque, biologically inert material (a pasteboard strip, sealed with paraffin wrapping, is satisfactory). Raise one end of the tray about 1.27 cm (0.5 inch) and add 3 liters of the synthetic seawater formulation (see Table 5).

TABLE 5—SYNTHETIC SEAWATER

[Toxicity test]

Salt	(g) [1]
NaF	1.9
$SrCl_2 \cdot 6H_2O$	13.0
H_3BO_3	20.0
KBr	67.0
KCl	466.0
$CaCl_2 \cdot 2H_2O$	733.0
Na_2SO_4	2,660.0
$MgCl_2 \cdot 6H_2O$	3,330.0
NaCl	15,650.0
$Na_2SiO_3 \cdot 9H_2O$	13.0
EDTA [2]	0.4
$NaHCO_3$	133.0

[1] Amount added to 900 liters of water, as described in the text.

[2] Ethylenediaminetetraacetate tetrasodium salt.

Spread 0.5 gram of *Artemia* eggs in the shallow end of the tray. Cover this end of the tray with a piece of cardboard to keep the eggs in darkness until hatching is complete. About 20 hours after the eggs hatch, direct a narrow beam of light across the uncovered portion of the tray. Since brine shrimp are phototactic, they will swim beneath the partition into the illuminated end of the chamber and congregate in the beam of light. The *Artemia* concentrated in the beam of light can be easily collected with the use of a collecting pipette or siphon connected to a 30-cm (12-inch) rubber tube and mouthpiece. Transfer them to a beaker containing a small amount of the artificial seawater.

An alternative method for hatching *Artemia* eggs is to use a separator funnel. A small air line is placed in the botton of the funnel and air is bubbled at a rate sufficient to keep the eggs from settling to the bottom. After the eggs hatch, the air line is removed and the newly hatched nauplii will settle to the bottom of the funnel where they can be drawn off without disturbing the empty egg cases, which will have floated to the surface.

Preparation of Experimental Water. Because large quantities of dilution water will be used in these tests, formulate the experimental water in large batches to ensure uniformity and constant conditions for the various tests. To prevent contamination, prepare and store the experimental water in inert containers of suitable size.

Synthetic Seawater Formation. To prepare standard seawater, mix technical-grade salts with 900 liters of distilled or demineralized water in the order and quantities listed in Table 5. These ingredients must be added in the order listed and each ingredient must be dissolved before another is added. Stir constantly after each addition during preparation until dissolution is complete.

Add distilled or demineralized water to make up to 1,000 liters. The pH should now be 8.0 ± 0.2. To attain the desired salinity of 20 ± 1 ppt, dilute again with distilled or demineralized water at time of use.

3.3 *Sampling and Storage of Test Materials.* Toxicity tests are performed with No. 2 fuel oil having the characteristics defined in Table 6. Store oil used in toxicity tests in sealed containers to prevent the loss of volatiles and other changes. For ease in handling and use, it is recommended that 1,000-ml glass containers be used. To ensure comparable results in the bioassay tests, use oils packaged and sealed at the source. Dispose of unused oil in each open container on completion of dosing to prevent its use at a later date when it may have lost some of its volatile components. Run all tests in a bioassay series with oil from the same container and with organisms from the same group collected or secured from the same source.

TABLE 6—TEST OIL CHARACTERISTICS: NO. 2 FUEL OIL

Characteristic	Minimum	Maximum
Gravity (°API)	32.1	42.8
Viscosity kinematic at 100°F (cs)	2.35	3.00
Flash point (°F)	150	
Pour point (°F)		0

TABLE 6—TEST OIL CHARACTERISTICS: NO. 2 FUEL OIL—Continued

Characteristic	Minimum	Maximum
Cloud point (°F)		10
Sulfur (wt %)		0.35
Aniline point (°F)	125	180
Carbon residue (wt %)		0.16
Water (vol %)		0
Sediment (wt %)		0
Aromatics (vol %)	10	15
Distillation.		
IBP (°F)	347	407
10% (°F)	402	456
50% (°F)	475	530
90% (°F)	542	606
End Point (°F)	590	655
Neutralization No.		0.05

3.4 *General Test Conditions and Procedures for Toxicity Tests. Temperature.* For these toxicity tests, use test solutions with temperatures of 20 ± 1°C.

Dissolved Oxygen and Aeration. Fundulus. Because oils and dispersants contain toxic, volatile materials, and because the toxicity of some water-soluble fractions of oil and degradation products are changed by oxidation, special care must be used in the oxygenation of test solutions. A 2 liter volume of solution is used for the ***Fundulus*** test. Initiate aeration to provide dissolved oxygen (DO)) and mixing after the fish are added. The DO content of test solutions must not drop below 4 ppm. Aerate at a rate of 100 ± 15 bubbles per minute supplied from a 1-ml serological pipette. At this rate and with the proper weight of fish, DO concentration should remain slightly above 4 ppm over a 96-hour period. Take DO measurements daily.

Artemia. Achieve sufficient DO by ensuring the surface area to volume ratio of the test solution exposed is large enough. Oxygen content should remain high throughout the test because of the small quantity of test substances added and the low oxygen demand of organisms in each dish.

Controls. With each fish or ***Artemia*** test or each series of simultaneous tests of different solutions, perform a concurrent control test in exactly the same manner as the other tests and under the conditions prescribed or selected for those tests. Use the diluent water alone as the medium in which the controls are held. There must be no more than 10 percent mortality among the controls during the course of any valid test.

Reference Toxicant. To aid in comparing results from tests performed by different workers and to detect changes in the condition of the test organisms that might lead to different results, perform reference toxicity tests with reagent grade doderyl sodium sulfate (DSS) in addition to the usual control tests. Prepare a stock solution of DSS immediately before use by adding 1 gram of DSS per 500 ml of test water solution. Use exploratory tests before the full scale tests are begun to determine the amount of reference standard to be used in each of the five different concentrations.

Number of Organisms. For the toxicity test procedures using ***Fundulus***, place two fish in each jar. For the toxicity tests using ***Artemia***, place 20 larvae in each container.

Transfer of Organisms. Transfer ***Fundulus*** from the acclimatizing aquaria to the test containers only with small-mesh dip nets of soft material, and do not rest the net on any dry surface. Do not hold fish out of the water longer than necessary. Discard any specimen accidentally dropped or otherwise mishandled during transfer.

Artemia can be conveniently handled and transferred with a small pipette connected to a 30-cm (12-inch) length of rubber tubing and mouthpiece or with a Pasteur pipette equipped with a small rubber squeeze bulb. To have the necessary ***Artemia*** ready for the study, transfer 20 ***Artemia*** apiece into small beakers containing 20 ml of artificial seawater. Hold these batches of ***Artemia*** until they are 24 hours old; at that time, place them in the respective series of test concentrations set up for the toxicity test.

To avoid large fluctuations in the metabolic rate of organisms and the fouling of test solutions with metabolic waste products and uneaten food, do not feed organisms during tests.

Test Duration and Observations. Fish. Observe the number of dead fish in each test container and record at the end of each 24-hour period. Fish are considered dead upon cessation of respiratory and all other overt movements, whether spontaneous or in response to mild mechanical prodding. Remove dead fish as soon as observed.

Also note and report when the behavior of test fish deviates from that of control fish. Such behavioral changes would include variations in opercular movement, coloration, body orientation, movement, depth in container, schooling tendencies, and others. Abnormal behavior of the test organisms (especially during the first 24 hours) is a desirable parameter to monitor in a toxicity test because changes in behavior and appearance may precede mortality. Toxicants can reduce an organism's ability to survive natural stresses. In these cases, the mortality is not directly attributed to the toxicant, but most certainly is an indirect effect. Reports on behavioral changes during a toxicity test can give insight into the nonacute effects of the tested material.

At the end of the 96-hour period, terminate the fish tests and determine the LC50 values.

Artemia. Terminate the *Artemia* test after 48 hours of incubation. To count the dead animals accurately and with relative ease, place the test dishes on a black surface and hold a narrow beam of light parallel to the bottom of the dish. Most of the dead *Artemia* will be on the bottom of the test dish and can be readily seen against the black background. Also search the top of the liquid for *Artemia* trapped there by surface tension. Exercise caution when determining death of the animals. Occasionally, an animal appears dead, but closer observation shows slight movement of an appendage or a periodic spasm of its entire body. For this test, animals exhibiting any movement when touched with a needle are considered alive. Account for all test animals to ensure accuracy since some *Artemia* may disintegrate. Consider individuals not accounted for as dead.

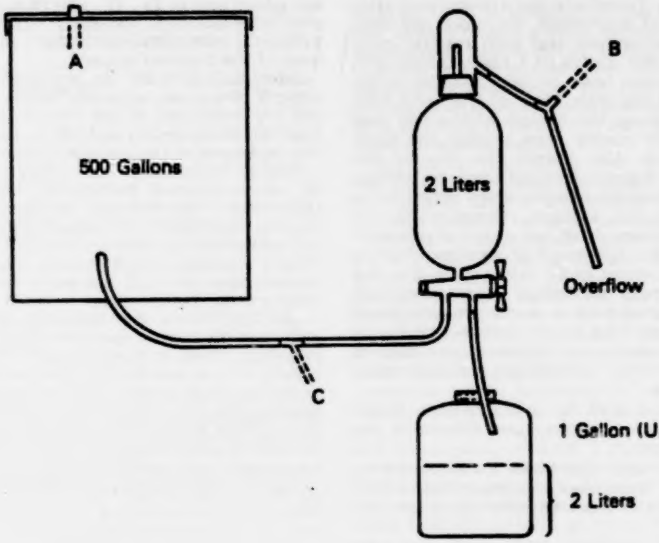
At the end of 48 hours of exposure, terminate the *Artemia* assay and determine the LC50 values.

Physical and Chemical Determinations. Fundulus. Determine the temperature, DO, and pH of the test solutions before the fish are added and at 24-, 72-, and 96-hour exposure intervals. It is necessary to take measurements from only one of the replicates of each of the toxicant series.

Artemia. Determine the temperature, DO, and pH of the test solutions before the nauplii are added and at the 48-hour exposure interval. Measure DO and pH in only one of the replicates of each of the toxicant series.

Testing Laboratory. An ordinary heated or air-conditioned laboratory room with thermostatic controls suitable for maintaining the prescribed test temperatures generally will suffice to conduct the toxicity tests. Where ambient temperatures cannot be controlled to 20 ±1°C, use water baths with the necessary temperature controls.

Test Containers. For fish tests, use 4-liter glass jars measuring approximately 22.5 cm in height, 15 cm in diameter and 11 cm in diameter at the mouth. The jars are to have screw top lids, lined with Teflon. In conducting the test, add to each of the jars 2 liters of the synthetic seawater formulation aerated to saturation with DO. To add the 2 liters easily and accurately, use a 2-liter-capacity, automatic dispensing pipette (Figure 3).



A = Inflow from Large Holding Reservoir

B = Overflow from Other Units in Series

C = Inflow to Other Units

Figure 3. Schematic Diagram of Automatic Dispensing Pipette System

For the *Artemia* tests, use Carolina culture dishes (or their equivalent) having dimensions approximately 8.9 cm by 3.8 cm (3.5 by 1.5 inches).

Process all required glassware before each test. Immerse in normal hexane for 10 minutes. Follow this with a thorough rinse with hot tap water, three hot detergent scrubs, an additional hot tap-water rinse, and three rinses with distilled water. Oven or air dry the glassware in a reasonably dust-free atmosphere.

3.5 *Preparation of Test Concentrations. Fundulus.* Place the test jars containing 2 liters of synthetic seawater on a reciprocal shaker. The shaker platform should be adapted to hold firmly six of the toxicity test jars. Add the desired amount of the petroleum product under test directly to each test jar. Dispense the appropriate amount of toxicant into the jars with a pipette. Tightly cap the test jars and shake for 5 minutes at approximately 315 to 333 2-cm (0.75-inch) strokes per minute in a reciprocal shaker or at approximately 150 to 160 rpm on orbital shakers. At the completion of shaking, remove the jars from the shaker to a constant-temperature water bath or room, remove the lids, take water quality measurements, add two test fish, and initiate aeration.

Artemia. To prepare test solutions for dispersants and oil/dispersant mixtures, blend or mix the test solutions with an electric blender having: speeds of 10,000 rpm or less, a stainless-steel cutting assembly and a 1-

liter borosilicate jar. To minimize foaming, blend at speeds below 10,000 rpm.

For the dispersant test solution, add 550 ml of the synthetic seawater to the jar, then with the use of a gas-tight calibrated glass syringe with a Teflon-tipped plunger, add 0.55 ml of the dispersant and mix for 5 seconds.

For the oil test solution, add 550 ml of the synthetic seawater to the jar, then with the use of a gas-tight calibrated glass syringe equipped with a Teflon-tipped plunger, add 0.55 ml of the oil and mix for 5 seconds.

For the oil/dispersant mixture, add 550 ml of the synthetic seawater to the mixing jar. While the blender is in operation, add 0.5 ml of the oil under study with the use of calibrated syringe with Teflon-tipped plunger and then 0.05 ml of the dispersant as indicated above. Blend for 5 seconds after addition of dispersant. These additions provide test solutions of the dispersant, oil, and the oil/dispersant mixture at concentrations of 1,000 ppm.

Immediately after the test solutions are prepared, draw up the necessary amount of test solution with a gas-tight Teflon-tipped glass syringe of appropriate size and dispense into each of the five containers in each series. If the series of five concentrations to be tested are 10, 18 32, 56, and 100 ppm, the amount of the test solution in the order of the concentrations listed above would be as follows: 1.0, 1.8, 3.2, 5.6, and 10.0 ml.

Each time a syringe is to be filled for dispensing to the series of test containers, start the mixer and withdraw the desired amount in the appropriate syringe while the mixer is in operation. Turn off immediately after the sample is taken to limit the loss of volatiles.

Use exploratory tests before the full-scale test is set up to determine the concentration of toxicant to be used in each of the five different concentrations. After adding the required amounts of liquid, bring the volume in each of the test containers up to 80 ml with the artificial seawater. To ensure keeping each of the series separate, designate on the lid of each container the date, the material under test, and its concentration.

When the desired concentrations are prepared, gently release into each dish the 20 test *Artemia* (previously transferred into 20 ml of medium). This provides a volume of 100 ml in each test chamber. A pair of standard cover glass forceps with flat, bent ends is an ideal tool for handling and tipping the small beaker without risk of contaminating the medium.

After adding the test animals, incubate the test dishes at 20 ± 1°C for 48 hours. Recommended lighting is 2,000 lumens/m^2 (200 ft-c) of diffused, constant, fluorescent illumination coming from beneath the culture dishes during incubation. Because *Artemia* are phototactic, bottom lighting should keep them from direct contact with the oil that sometimes layers on top.

Wash the blender thoroughly after use and repeat the above procedures for each series of tests. Wash the blender as follows: rinse with normal hexane, pour a strong solution of laboratory detergent into the blender to cover the blades, fill the container to about half of its volume with hot tap water, operate the blender for about 30 seconds at high speed, remove and rinse twice with hot tap water, mixing each rinse for 5 seconds at high speed, and then rinse twice with distilled water, mixing each rinse for 5 seconds at high speed.

3.6 *Calculating and Reporting.* At the end of the test period, the toxicity tests are terminated and the LC50 values are determined.

Calculations. The LC50 is the concentration lethal to 50 percent of the test population. It can be calculated as an interpolated value based on percentages of organisms surviving at two or more concentrations, at which less than half and more than half survived. The LC50 can be estimated with the aid of computer programs or graphic techniques (log paper). The 95 percent confidence intervals for the LC50 estimate should also be determined.

Reporting. The test dispersant and oil and their source and storage are described in the toxicity test report. Note any observed changes in the experimental water or the test solutions. Also include the species of fish used; the sources, size, and condition of the fish; data of any known treatment of the fish for disease or infestation with parasites before their use; and any observations on the fish behavior at regular intervals during tests. In addition to the calculated LC50 values, other data necessary for interpretation (e.g., DO, pH, other physical parameters, and the percent survival at the end of each day of exposure at each concentration of toxicant) should be reported.

3.7 *Summary of Procedures.*

Fundulus:

1. Prepare adequate stocks of the appropriate standard dilution water.

2. Add 2 liters of the standard dilution water to the 4-liter test jars. Each test consists of 5 replicates of each of 5 concentrations of the test material, a control series of 5 dishes, and a standard reference series of 5 different concentrations for a total of 35 dishes. Simultaneous performance of toxicity tests on the oil, dispersant, and oil/dispersant mixture requires a total of 105 dishes.

3. Add the determined amount (quarter points on the log scale) of test material to the appropriate jars. Preliminary tests will be necessary to define the range of definitive test concentrations.

4. Cap the jars tightly with the Teflon-lined screw caps and shake for 5 minutes at 315 to 333 2-cm (0.75-inch) strokes per minute on a reciprocal shaker.

5. Remove the jars from the shaker, take water quality data, and add two acclimated fish per jar.

6. Aerate with 100±15 bubbles per minute through a 1-ml serological pipette.

7. Observe and record mortalities, water quality, and behavioral changes each 24 hours.

8. After 96 hours, terminate the test, and calculate LC50 values and corresponding confidence limits.

Artemia:

1. Initiate the procedure for hatching the *Artemia* in sufficient time (approximately 48 hours) before the toxicity test is to be conducted so that 24-hour-old larvae are available.

2. With the use of a small pipette, transfer 20 *Artemia* into small beakers, each containing 20 ml of the proper synthetic seawater.

3. To prepare the test stock dispersant and oil solutions, add 550 ml of the artificial seawater to the prescribed blender jar. By means of a gas-tight glass syringe with a Teflon-tipped plunger, add 0.55 ml of the dispersant (or oil) and mix at 10,000 rpm for 5 seconds. To prepare the test stock oil/dispersant mixture, add 550 ml of the standard seawater to the blender jar. While the blender is in operation (10,000 rpm), add 0.5 ml of the oil, then 0.05 ml of the dispersant with the use of a calibrated syringe with a Telfon-tipped plunger. Blend for 5 seconds after adding the dispersant. One ml of these stock solutions added to the 100 ml of standard seawater in the test containers yields a concentration of 10 ppm dispersant, oil, or oil/dispersant combination (the test will be in a ratio of 1 part dispersant to 10 parts of oil).

4. Each test consists of 5 replications of each of 5 concentrations of the material under study, a control series of 5 dishes, and a standard reference series of 5 different concentrations, a total of 35 dishes. Simultaneous performance of toxicity tests on the oil, dispersant, and oil/dispersant mixture requires a total of 105 dishes. Immediately after preparing the test solution of the dispersant or oil/dispersant solution, and using an appropriately sized syringe, draw up the necessary amount of test solution and dispense into each of the five containers in each series.

Each time a syringe is to be filled for dispensing to the series of test containers, start the mixer and withdraw the desired amount in the appropriate syringe while the mixer is in operation. Turn mixer off immediately after the sample is taken to limit the loss of volatiles. After adding the required amount of the test oil/dispersant or dispersant mixture, bring the volume of liquid in each of the test containers up to 80 ml with the artificial seawater.

When the desired concentrations have been prepared, gently release into each dish the 20 nauplii previously transferred into 20 ml of medium. This provides a volume of 100 ml in each test chamber. Use a pair of standard cover glass forceps for handling and tipping the small beaker.

5. Wash the blender as prescribed for each series of tests.

6. Incubate the test dishes at 20 ±1°C for 48 hours with the prescribed lighting.

7. Terminate the experiment after 48 hours, observe and record the mortalities, and determine the LC50s and corresponding confidence limits.

4.0 Summary Technical Product Test Data Format

The purpose of this format is to summarize in a standard and convenient presentation the technical product test data required by the U.S. Environmental Protection Agency (EPA) before a product may be added to EPA's NCP Product Schedule, that may be used in carrying out the National Oil and Hazardous Substances Pollution Contingency Plan. This format, however, is not to preclude the submission of all the laboratory data used to develop the data summarized in this format. Sufficient data should be presented on both the effectiveness and toxicity tests to enable EPA to evaluate the adequacy of the summarized data.

A summary of the technical product test data should be submitted in the following format. The numbered headings should be used in all submissions. The subheadings indicate the kinds of information to be supplied. The listed subheadings, however, are not exhaustive; additional relevant information should be reported where necessary. As noted some subheadings may apply only to particular types of agents.

I. *Name, Brand, or Trademark:*

II. *Name, Address, and Telephone Number of Manufacturer:*

III. *Name, Address, and Telephone Numbers of Primary Distributors:*

IV. *Special Handling and Worker Precautions for Storage and Field Application*

1. Flammability.

2. Ventilation.

3. Skin and eye contact; protective clothing; treatment in case of contact.

4. Maximum and minimum storage temperatures; optimum storage temperature range; temperatures of phase separations and chemical changes.

V. *Shelf Life.*

VI. *Recommended Application Procedure.*

1. Application method.

2. Concentration, application rate (e.g., gallons of dispersant per ton of oil).

3. **Conditions for use: water salinity, water temperature, types and ages of pollutants.**

VII(a). ***Toxicity (Dispersants and Surface Collecting Agents):***

Materials tested	Species	LC50 (ppm)
Product	*Fundulus heteroclitus*	——96-hr.
	Artemia salina	——48-hr.
No. 2 fuel oil	*Fundulus heteroclitus*	——96-hr.
	Artemia salina	——48-hr.
Product and No. 2 fuel oil (1:10).	*Fundulus heteroclitus*	——96-hr.
	Artemia salina	——48-hr.

VII(b). ***Effective (Dispersants):***

STANDARD EFFECTIVENESS TEST WITH NO. 6 FUEL OIL

Volume (ml) dispersant	Initial (10 min) mean percent dispersion	Final (2 hrs) mean percent dispersion
3		
10		
25		

Dosage causing 50 percent dispersion (from initial dispersion graph) is ——ml.

Dosage causing 25 percent dispersion (from initial dispersion graph) is ——ml.

VIII. *Microbiological Analysis (Biological Additives).*

IX. *Physical Properties of Dispersant/Surface Collecting Agent:*

1. ***Flash Point:* (°F)**
2. ***Pour Point:* (°F).**
3. ***Viscosity:——at——*°F (furol seconds).**
4. ***Specific Gravity:——at——*°F.**
5. ***pH:* (10 percent solution if hydrocarbon based).**
6. ***Surface Active Agents (Dispersants).*[1]**
7. ***Solvents (Dispersants):*[1]**
8. ***Additives (Dispersants):***
9. ***Solubility (Surface Collecting Agents):***

X. *Analysis for Heavy Metals and Chlorinated Hydrocarbons (Dispersants and Surface Collecting Agents):*

Compounds	Concentration (ppm)
Arsenic	
Cadmium	
Chromium	
Copper	
Lead	
Mercury	
Nickel	
Zinc	
Cyanide	
Chlorinated Hydrocarbons	

REFERENCES

(1) L.T. McCarthy, Jr., I. Wilder, and J.S. Dorrler. *Standard Dispersant Effectiveness and Toxicity Tests.* EPA Report EPA-R2-73-201 (May 1973).

(2) R.T. Rewick, H.C. Bailey, and J.H. Smith. *Evaluation of Oil Spill Dispersant Testing Requirements,* draft report submitted in partial fulfillment of EPA Contract No. 68-03-2621. U.S. Environmental Protection Agency, Oil and Hazardous Materials Spills Branch, Edison, New Jersey (September 1982).

(3) R.T. Rewick, K.A. Sabo, J. Gates, J.H. Smith, and L.T. McCarthy, Jr. "An Evaluation of Oil Spill Dispersant Testing Requirements." *Proceedings, 1981 Oil Spill Conference,* Publication No. 4334. American Petroleum Institute, 1220 L Street, NW., Washington, DC 20005 (1981).

[49 FR 29199, July 18, 1984]

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

Sec.
302.1 Applicability.
302.2 Abbreviations.
302.3 Definitions.
302.4 Designation of hazardous substances.
302.5 Determination of reportable quantities.
302.6 Notification requirements.
302.7 Penalties.

AUTHORITY: Sec. 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9602; secs. 311 and 501(a) of the Federal Water Pollution Control Act, 33 U.S.C. 1321 and 1361.

SOURCE: 50 FR 13474, Apr. 4, 1985, unless otherwise noted.

§ 302.1 Applicability.

This regulation designates under section 102(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("the Act") those substances in the statutes referred to in section 101(14) of the

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[1] **If the submitter claims that the information presented under this subheading is confidential, this information should be submitted on a separate sheet of paper clearly labeled according to the subheading and entitled "Confidential Information."**

Act, identifies reportable quantities for these substances, and sets forth the notification requirements for releases of these substances. This regulation also sets forth reportable quantities for hazardous substances designated under section 311(b)(2)(A) of the Clean Water Act.

§ 302.2 Abbreviations.

CASRN = Chemical Abstracts Service Registry Number
RCRA = Resource Conservation and Recovery Act of 1976, as amended
lb = pound
kg = kilogram
RQ = reportable quantity

§ 302.3 Definitions.

As used in this part, all terms shall have the meaning set forth below:

"*The Act*", "CERCLA", or "Superfund" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Pub. L. 96-510);

"*Administrator*" means the Administrator of the United States Environmental Protection Agency ("EPA");

"Consumer product" shall have the meaning stated in 15 U.S.C. 2052;

"*Environment*" means (1) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Fishery Conservation and Management Act of 1976, and (2) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States;

"*Facility*" means (1) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, [illegible] aircraft, or (2) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel;

"*Hazardous substance*" means any substance designated pursuant to 40 CFR Part 302;

"*Hazardous waste*" shall have the meaning provided in 40 CFR 261.3;

"*Navigable waters*" or "navigable waters of the United States means waters of the United States, including the territorial seas;

"*Offshore facility*" means any facility of any kind located in, on, or under, any of the navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel;

"*Onshore facility*" means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under, any land or non-navigable waters within the United States;

"*Person*" means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State, or any interstate body;

"*Release*" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, but excludes (1) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons, (2) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, (3) release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such Act, or for the purposes of section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act or any other response action, any release of source, byproduct, or special nuclear material from any processing site designated under section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978, and (4) the normal application of fertilizer;

"*Reportable quantity*" means that quantity, as set forth in this part, the release of which requires notification pursuant to this part;

"*United States*" include the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Commonwealth of the Northern Marianas, and any other territory or possession over which the United States has jurisdiction; and

"*Vessel*" means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water.

§ 302.4 Designation of hazardous substances.

(a) *Listed hazardous substances*. The elements and compounds and hazardous wastes appearing in Table 302.4 are designated as hazardous substances under section 102(a) of the Act.

(b) *Unlisted hazardous substances*. A solid waste, as defined in 40 CFR 261.2, which is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b), is a hazardous substance under section 101(14) of the Act if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24.

NOTE: The numbers under the column headed "CASRN" are the Chemical Abstracts Service Registry Numbers for each hazardous substance. Other names by which each hazardous substance is identified in other statutes and their implementing regulations are provided in the "Regulatory Synonyms" column. The "Statutory RQ" column lists the RQs for hazardous substances established by section 102 of CERCLA. The "Statutory Code" column indicates the statutory source for designating each substance as a CERCLA hazardous substance: "1" indicates that the statutory source is section 311(b)(4) of the Clean Water Act, "2" indicates that the source is section 307(a) of the Clean Water Act, "3" indicates that the source is section 112 of the Clean Air Act, and "4" indicates that the source is RCRA section 3001. The "RCRA Waste Number" column provides the waste identification numbers assigned to various substances by RCRA regulations. The column headed "Category" lists the code letters "X," "A," "B," "C," and "D," which are associated with reportable quantities of 1, 10, 100, 1000, and 5000 pounds, respectively. The "Pounds (kg)" column provides the reportable quantity for each hazardous substance in pounds and kilograms.

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Acenaphthene	83329		1*	2		B	100 (45.4)
Acenaphthylene	208968		1*	2		D	5000 (2270)
Acetaldehyde	75070	Ethanal	1000	1,4	U001	C	1000 (454)
Acetaldehyde, chloro-	107200	Chloroacetaldehyde	1*	4	P023	C	1000 (454)
Acetaldehyde, trichloro-	75876	Chloral	1*	4	U034	X	1#(0.454)
Acetamide, N-(aminothioxomethyl)-	591082	1-Acetyl-2-thiourea	1*	4	P002	C	1000 (454)
Acetamide, N-(4-ethoxyphenyl)-	62442	Phenacetin	1*	4	U187	X	1# (0.454)
Acetamide, N-9H-fluoren-2-yl-.	53963	2-Acetylaminofluorene	1*	4	U005	X	1# (0.454)
Acetamide, 2-fluoro-	640197	Fluoroacetamide	1*	4	P057	B	100(45.4)
Acetic acid	64197		1000	1		D	5000 (2270)
Acetic acid, ethyl ester	141786	Ethyl acetate	1*	4	U112	D	5000 (2270)
Acetic acid, fluoro-, sodium salt.	62748	Fluoroacetic acid, sodium salt.	1*	4	P058	A	10 (4.54)
Acetic acid, lead salt	301042	Lead acetate	5000	1,4	U144	D	5000# (2270)
Acetic acid, thallium(I) salt.	563688	Thallium(I) acetate	1*	4	U214	B	100 (45.4)
Acetic anhydride	108247		1000	1		D	5000 (2270)
Acetimidic acid,N-[(methylcarbamoyl)oxy]thio-, methyl ester.	16752775	Methomyl	1*	4	P066	B	100 (45.4)
Acetone	67641	2-Propanone	1*	4	U002	D	5000 (2270)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Acetone cyanohydrin	75865	2-Methyllactonitrile Propanenitrile, 2-hydroxy-2-methyl-	10	1,4	P069	A	10 (4.54)
Acetonitrile	75058	Ethanenitrile	1*	4	U003	D	5000 (2270)
3-(alpha-Acetonylbenzyl)- 4-hydroxycoumarin and salts.	81812	Warfarin	1*	4	P001	B	100 (45.4)
Acetophenone	98862	Ethanone, 1-phenyl-	1*	4	U004	D	5000 (2270)
2-Acetylaminofluorene	53963	Acetamide, N-9H-fluoren-2-yl-.	1*	4	U005	X	1# (0.454)
Acetyl bromide	506967		5000	1		D	5000 (2270)
Acetyl chloride	75365	Ethanoyl chloride	5000	1,4	U006	D	5000 (2270)
1-Acetyl-2-thiourea	591082	Acetamide, N-(aminothioxomethyl)-.	1*	4	P002	C	1000 (454)
Acrolein	107028	2-Propenal	1	1,2,4	P003	X	1 (0.454)
Acrylamide	79061	2-Propenamide	1*	4	U007	D	5000 (2270)
Acrylic acid	79107	2-Propenoic acid	1*	4	U008	D	5000 (2270)
Acrylonitrile	107131	2-Propenenitrile	100	1,2,4	U009	B	100# (45.4)
Adipic acid	124049		5000	1		D	5000 (2270)
Alanine, 3-[p-bis(2-chloroethyl)amino] phenyl-,L-.	148323	Melphalan	1*	4	U150	X	1# (0.454)
Aldicarb	116063	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino) carbonyl]oxime.	1*	4	P070	X	1 (0.454)
Aldrin	309002	1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro- 1,4:5,8-endo, exo-dimethanonaphthalene.	1	1,2,4	P004	X	1# (0.454)
Allyl alcohol	107186	2-Propen-1-ol	100	1,4	P005	B	100 (45.4)
Allyl chloride	107051		1000	1		C	1000 (454)
Aluminum phosphide	20859738		1*	4	P006	B	100 (45.4)
Aluminum sulfate	10043013		5000	1		D	5000 (2270)
2-Amino-1-methyl benzene.	95534	o-Toluidine	1*	4	U328	X	1# (0.454)
4-Amino-1-methyl benzene.	106490	p-Toluidine	1*	4	U353	X	1# (0.454)
5-(Aminomethyl)-3-isoxazolol.	2763964	3(2H)-Isoxazolone, 5-(aminomethyl)-.	1*	4	P007	C	1000 (454)
4-Aminopyridine	504245	4-Pyridinamine	1*	4	P008	C	1000 (454)
Amitrole	61825	1H-1,2,4-Triazol-3-amine	1*	4	U011	X	1# (0.454)
Ammonia	7664417		100	1		B	100 (45.4)
Ammonium acetate	631618		5000	1		D	5000 (2270)
Ammonium benzoate	1863634		5000	1		D	5000 (2270)
Ammonium bicarbonate	1066337		5000	1		D	5000 (2270)
Ammonium bichromate	7789095		1000	1		C	1000# (454)
Ammonium bifluoride	1341497		5000	1		B	100 (45.4)
Ammonium bisulfite	10192300		5000	1		D	5000 (2270)
Ammonium carbamate	1111780		5000	1		D	5000 (2270)
Ammonium carbonate	506876		5000	1		D	5000 (2270)
Ammonium chloride	12125029		5000	1		D	5000 (2270)
Ammonium chromate	7788989		1000	1		C	1000# (454)
Ammonium citrate, dibasic.	3012655		5000	1		D	5000 (2270)
Ammonium fluoborate	13826830		5000	1		D	5000 (2270)
Ammonium fluoride	12125018		5000	1		B	100 (45.4)
Ammonium hydroxide	1336216		1000	1		C	1000 (454)
Ammonium oxalate	6009707 5972736 14258492		5000	1		D	5000 (2270)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Ammonium picrate	131748	Phenol, 2,4,6-trinitro-, ammonium salt.	1*	4	P009	A	10 (4.54)
Ammonium silicofluoride	16919190		1000	1		C	1000 (454)
Ammonium sulfamate	7773060		5000	1		D	5000 (2270)
Ammonium sulfide	12135761		5000	1		B	100 (45.4)
Ammonium sulfite	10196040		5000	1		D	5000 (2270)
Ammonium tartrate	14307438		5000	1		D	5000 (2270)
	3164292						
Ammonium thiocyanate	1762954		5000	1		D	5000 (2270)
Ammonium thiosulfate	7783188		5000	1		D	5000 (2270)
Ammonium vanadate	7803556	Vanadic acid, ammonium salt.	1*	4	P119	C	1000 (454)
Amyl acetate	628637		1000	1		D	5000 (2270)
iso-	123922						
sec-	626380						
tert-	625161						
Aniline	62533	Benzenamine	1000	1,4	U012	D	5000 (2270)
Anthracene	120127		1*	2		D	5000 (2270)
Antimony ††	7440360		1*	2		D	5000 (2270)
ANTIMONY AND COMPOUNDS.			1*	2			**
Antimony pentachloride	7647189		1000	1		C	1000 (454)
Antimony potassium tartrate.	28300745		1000	1		B	100 (45.4)
Antimony tribromide	7789619		1000	1		C	1000 (454)
Antimony trichloride	10025919		1000	1		C	1000(454)
Antimony trifluoride	7783564		1000	1		C	1000 (454)
Antimony trioxide	1309644		5000	1		C	1000 (454)
Aroclor 1016	12674112	Polychlorinated Biphenyls (PCBs).	10	1,2		A	10# (4.54)
Aroclor 1221	11104282	Polychlorinated Biphenyls (PCBs).	10	1,2		A	10# (4.54)
Aroclor 1232	11141165	Polychlorinated Biphenyls (PCBs).	10	1,2		A	10# (4.54)
Aroclor 1242	53469219	Polychlorinated Biphenyls (PCBs).	10	1,2		A	10# (4.54)
Aroclor 1248	12672296	Polychlorinated Biphenyls (PCBs).	10	1,2		A	10# (4.54)
Aroclor 1254	11097691	Polychlorinated Biphenyls (PCBs).	10	1,2		A	10# (4.54)
Aroclor 1260	11096825	Polychlorinated Biphenyls (PCBs).	10	1,2		A	10# (4.54)
Arsenic ††	7440382		1*	2,3		X	1#(0.454)
Arsenic acid	1327522		1*	4	P010	X	1# (0.454)
	7778394						
ARSENIC AND COMPOUNDS.			1*	2			**
Arsenic disulfide	1303328		5000	1		D	5000# (2270)
Arsenic(III) oxide	1327533	Arsenic trioxide	5000	1,4	P012	D	5000# (2270)
Arsenic(V) oxide	1303282	Arsenic pentoxide	5000	1,4	P011	D	5000#(2270)
Arsenic pentoxide	1303282	Arsenic(V) oxide	5000	1,4	P011	D	5000# (2270)
Arsenic trichloride	7784341		5000	1		D	5000# (2270)
Arsenic trioxide	1327533	Arsenic(III) oxide	5000	1,4	P012	D	5000# (2270)
Arsenic trisulfide	1303339		5000	1		D	5000# (2270)
Arsine, diethyl-	692422	Diethylarsine	1*	4	P038	X	1# (0.454)
Asbestos †††	1332214		1*	2,3		X	1# (0.454)
Auramine	492808	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-.	1*	4	U014	X	1# (0.454)
Azaserine	115026	L-Serine, diazoacetate (ester).	1*	4	U015	X	1# (0.454)
Aziridine	151564	Ethylenimine	1*	4	P054	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Azirino(2',3':3,4)pyrrolo (1,2-a)indole-4,7-dione,6-amino-8-[((aminocarbonyl)oxy) methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-.	50077	Mitomycin C	1*	4	U010	X	1# (0.454)
Barium cyanide	542621		10	1,4	P013	A	10 (4.54)
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-.	56495	3-Methylcholanthrene	1*	4	U157	X	1# (0.454)
Benz[c]acridine	225514	3,4-Benzacridine	1*	4	U016	X	1# (0.454)
3,4-Benzacridine	225514	Benz[c]acridine	1*	4	U016	X	1# (0.454)
Benzal chloride	98873	Benzene, dichloromethyl-.	1*	4	U017	D	5000 (2270)
Benz[a]anthracene	56553	1,2-Benzanthracene Benzo[a]anthracene	1*	2,4	U018	X	1# (0.454)
1,2-Benzanthracene	56553	Benz[a]anthracene Benzo[a]anthracene	1*	2,4	U018	X	1# (0.454)
1,2-Benzanthracene, 7,12-dimethyl-.	57976	7,12-Dimethylbenz[a] anthracene.	1*	4	U094	X	1# (0.454)
Benzenamine	62533	Aniline	1000	1,4	U012	D	5000 (2270)
Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-.	492808	Auramine	1*	4	U014	X	1# (0.454)
Benzenamine, 4-chloro-	106478	p-Chloroaniline	1*	4	P024	C	1000 (454)
Benzenamine, 4-chloro-2-methyl-,hydrochloride.	3165933	4-Chloro-o-toluidine, hydrochloride.	1*	4	U049	X	1# (0.454)
Benzenamine, N,N-dimethyl-4-phenylazo-.	60117	Dimethylaminoazobenzene.	1*	4	U093	X	1# (0.454)
Benzenamine, 4,4'-methylenebis(2-chloro-.	101144	4,4'-Methylenebis(2-chloroaniline).	1*	4	U158	X	1# (0.454)
Benzenamine, 2-methyl-, hydrochloride.	636215	o-Toluidine hydrochloride.	1*	4	U222	X	1# (0.454)
Benzenamine, 2-methyl-5-nitro-.	99558	5-Nitro-o-toluidine	1*	4	U181	X	1# (0.454)
Benzenamine, 4-nitro-	100016	p-Nitroaniline	1*	4	P077	D	5000 (2270)
Benzene	71432		1000	1,2,3,4	U019	C	1000# (454)
Benzene, 1-bromo-4-phenoxy-.	101553	4-Bromophenyl phenyl ether.	1*	2,4	U030	B	100 (45.4)
Benzene, chloro-	108907	Chlorobenzene	100	1,2,4	U037	B	100 (45.4)
Benzene, chloromethyl-	100447	Benzyl chloride	100	1,4	P028	B	100# (45.4)
Benzene, 1,2-dichloro-	95501	1,2-Dichlorobenzene o-Dichlorobenzene	100	1,2,4	U070	B	100 (45.4)
Benzene, 1,3-dichloro-	541731	1,3-Dichlorobenzene m-Dichlorobenzene	1*	2,4	U071	B	100 (45.4)
Benzene, 1,4-dichloro-	106467	1,4-Dichlorobenzene p-Dichlorobenzene	100	1,2,4	U072	B	100 (45.4)
Benzene, dichloromethyl-.	98873	Benzal chloride	1*	4	UU17	D	5000 (2270)
Benzene, 2,4-diisocyanatomethyl-.	584849 91087 26471625	Toluene diisocyanate	1*	4	U223	B	100 (45.4)
Benzene, dimethyl	1330207	Xylene	1000	1,4	U239	C	1000 (454)
m-	108383	m-					
o-	95476	o-					
p-	106423	p-					
Benzene, hexachloro-	118741	Hexachlorobenzene	1*	2,4	U127	X	1# (0.454)
Benzene, hexahydro-	110827	Cyclohexane	1000	1,4	U056	C	1000 (454)
Benzene, hydroxy-	108952	Phenol	1000	1,2,4	U188	C	1000 (454)
Benzene, methyl-	108883	Toluene	1000	1,2,4	U220	C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Benzene, 1-methyl-2,4-dinitro-	121142	2,4-Dinitrotoluene	1000	1,2,4	U105	C	1000# (454)
Benzene, 1-methyl-2,6-dinitro-	606202	2,6-Dinitrotoluene	1000	1,2,4	U106	C	1000# (454)
Benzene, 1,2-methylenedioxy-4-allyl-	94597	Safrole	1*	4	U203	X	1# (0.454)
Benzene, 1,2-methylenedioxy-4-propenyl-	120581	Isosafrole	1*	4	U141	X	1# (0.454)
Benzene, 1,2-methylenedioxy-4-propyl-	94586	Dihydrosafrole	1*	4	U090	X	1# (0.454)
Benzene, 1-methylethyl-	98828	Cumene	1*	4	U055	D	5000 (2270)
Benzene, nitro-	98953	Nitrobenzene	1000	1,2,4	U169	C	1000 (454)
Benzene, pentachloro-	608935	Pentachlorobenzene	1*	4	U183	A	10 (4.54)
Benzene, pentachloronitro-	82688	Pentachloronitrobenzene	1*	4	U185	X	1# (0.454)
Benzene, 1,2,4,5-tetrachloro-	95943	1,2,4,5-Tetrachlorobenzene.	1*	4	U207	D	5000 (2270)
Benzene, trichloromethyl-	98077	Benzotrichloride	1*	4	U023	X	1# (0.454)
Benzene, 1,3,5-trinitro-	99354	sym-Trinitrobenzene	1*	4	U234	A	10 (4.54)
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester.	510156	Ethyl 4,4'-dichlorobenzilate.	1*	4	U038	X	1# (0.454)
1,2-Benzenedicarboxylic acid anhydride.	85449	Phthalic anhydride	1*	4	U190	D	5000 (2270)
1,2-Benzenedicarboxylic acid,[bis(2-ethylhexyl)] ester.	117817	Bis(2-ethylhexyl)phthalate.	1*	2,4	U028	X	1# (0.454)
1,2-Benzenedicarboxylic acid,dibutyl ester.	84742	n-Butyl phthalate Dibutyl phthalate Di-n-butyl phthalate	100	1,2,4	U069	A	10 (4.54)
1,2-Benzenedicarboxylic acid,diethyl ester.	84662	Diethyl phthalate	1*	2,4	U088	C	1000 (454)
1,2-Benzenedicarboxylic acid,dimethyl ester.	131113	Dimethyl phthalate	1*	2,4	U102	D	5000 (2270)
1,2-Benzenedicarboxylic acid,di-n-octyl ester.	117840	Di-n-octyl phthalate	1*	2,4	U107	D	5000 (2270)
1,3-Benzenediol	108463	Resorcinol	1000	1,4	U201	D	5000 (2270)
1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-	51434	Epinephrine	1*	4	P042	C	1000 (454)
Benzenesulfonic acid chloride.	98099	Benzenesulfonyl chloride	1*	4	U020	B	100 (45.4)
Benzenesulfonyl chloride	98099	Benzenesulfonic acid chloride.	1*	4	U020	B	100 (45.4)
Benzenethiol	108985	Thiophenol	1*	4	P014	B	100 (45.4)
Benzidine	92875	(1,1'-Biphenyl)-4,4'diamine.	1*	2,4	U021	X	1# (0.454)
1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts.	81072	Saccharin and salts	1*	4	U202	X	1# (0.454)
Benzo[a]anthracene	56553	Benz[a]anthracene 1,2-Benzanthracene	1*	2,4	U018	X	1# (0.454)
Benzo[b]fluoranthene	205992		1*	2		X	1# (0.454)
Benzo(k)fluoranthene	207089		1*	2		X	1# (0.454)
Benzo[j,k]fluorene	206440	Fluoranthene	1*	2,4	U120	B	100 (45.4)
Benzoic acid	65850		5000	1		D	5000 (2270)
Benzonitrile	100470		1000	1		D	5000 (2270)
Benzo[ghi]perylene	191242		1*	2		D	5000 (2270)
Benzo[a]pyrene	50328	3,4-Benzopyrene	1*	2,4	U022	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
3,4-Benzopyrene	50328	Benzo[a]pyrene	1*	2,4	U022	X	1# (0.454)
p-Benzoquinone	106514	1,4-Cyclohexadienedione	1*	4	U197	A	10 (4.54)
Benzotrichloride	98077	Benzene, trichloromethyl-.	1*	4	U023	X	1# (0.454)
Benzoyl chloride	98884		1000	1		C	1000 (454)
1,2-Benzphenanthrene	218019	Chrysene	1*	2,4	U050	X	1# (0.454)
Benzyl chloride	100447	Benzene, chloromethyl-	100	1,4	P028	B	100# (45.4)
Beryllium ††	7440417	Beryllium dust	1*	2,3,4	P015	X	1# (0.454)
BERYLLIUM AND COMPOUNDS.			1*	2			**
Beryllium chloride	7787475		5000	1		D	5000# (2270)
Beryllium dust	7440417	Beryllium	1*	2,3,4	P015	X	1# (0.454)
Beryllium fluoride	7787497		5000	1		D	5000# (2270)
Beryllium nitrate	13597994 7787555		5000	1		D	5000# (2270)
alpha - BHC	319846		1*	2		X	1# (0.454)
beta - BHC	319857		1*	2		X	1# (0.454)
gamma - BHC	58899	Hexachlorocyclohexane (gamma isomer). Lindane	1	1,2,4	U129	X	1# (0.454)
delta - BHC	319868		1*	2		X	1 (0.454)
2,2'-Bioxirane	1464535	1,2:3,4-Diepoxybutane	1*	4	U085	X	1# (0.454)
(1,1'-Biphenyl)-4,4'diamine.	92875	Benzidine	1*	2,4	U021	X	1# (0.454)
(1,1'-Biphenyl)-4,4' diamine,3,3'dichloro-.	91941	3,3'-Dichlorobenzidine	1*	2,4	U073	X	1# (0.454)
(1,1'-Biphenyl)-4,4' diamine,3,3'dimethoxy-.	119904	3,3'-Dimethoxybenzidine	1*	4	U091	X	1# (0.454)
(1,1'Biphenyl)-4,4'-diamine,3,3'-dimethyl-.	119937	3,3'-Dimethylbenzidine	1*	4	U095	X	1# (0.454)
Bis(2-chloroethoxy) methane.	111911	Ethane, 1,1'-[methylenebis(oxy)] bis(2-chloro-.	1*	2,4	U024	C	1000 (454)
Bis (2-chloroethyl) ether	111444	Dichloroethyl ether Ethane, 1,1'-oxybis[2-chloro-	1*	2,4	U025	X	1# (0.454)
Bis(2-chloroisopropyl) ether.	108601	Propane, 2,2'-oxybis(2-chloro-.	1*	2,4	U027	C	1000 (454)
Bis(chloromethyl) ether	542881	Methane, oxybis(chloro-	1*	4	P016	X	1# (0.454)
Bis (dimethylthiocarbamoyl) disulfide.	137268	Thiram	1*	4	U244	A	10 (4.54)
Bis(2-ethylhexyl)phthalate.	117817	1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester.	1*	2,4	U028	X	1# (0.454)
Bromine cyanide	506683	Cyanogen bromide	1*	4	U246	C	1000 (454)
Bromoacetone	598312	2-Propanone, 1-bromo-	1*	4	P017	C	1000 (454)
Bromoform	75252	Methane, tribromo-	1*	2,4	U225	B	100 (45.4)
4-Bromophenyl phenyl ether.	101553	Benzene, 1-bromo-4-phenoxy-.	1*	2,4	U030	B	100 (45.4)
Brucine	357573	Strychnidin-10-one, 2,3-dimethoxy-.	1*	4	P018	B	100 (45.4)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-.	87683	Hexachlorobutadiene	1*	2,4	U128	X	1# (0.454)
1-Butanamine, N-butyl-N-nitroso-.	924163	N-Nitrosodi-n-butylamine	1*	4	U172	X	1# (0.454)
Butanoic acid, 4-[bis(2-chloroethyl)amino] benzene-.	305033	Chlorambucil	1*	4	U035	X	1# (0.454)
1-Butanol	71363	n-Butyl alcohol	1*	4	U031	D	5000 (2270)
2-Butanone	78933	Methyl ethyl ketone	1*	4	U159	D	5000 (2270)
2-Butanone peroxide	1338234	Methyl ethyl ketone peroxide.	1*	4	U160	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
2-Butenal	123739	Crotonaldehyde	100	1,4	U053	B	100 (45.4)
	4170303						
2-Butene, 1,4-dichloro-	764410	1,4-Dichloro-2-butene	1*	4	U074	X	1 (0.454)
Butyl acetate	123864		5000	1		D	5000 (2270)
iso-	110190						
sec-	105464						
tert-	540885						
n-Butyl alcohol	71363	1-Butanol	1*	4	U031	D	5000 (2270)
Butylamine	109739		1000	1		C	1000 (454)
iso-	78819						
sec-	513495						
sec-	13952846						
tert-	75649						
Butyl benzyl phthalate	85687		1*	2		B	100 (45.4)
n-Butyl phthalate	84742	1,2-Benzenedicarboxylic acid,dibutyl ester. Dibutyl phthalate Di-n-butyl phthalate	100	1,2,4	U069	A	10 (4.54)
Butyric acid	107926		5000	1		D	5000 (2270)
iso-	79312						
Cacodylic acid	75605	Hydroxydimethylarsine oxide.	1*	4	U136	X	1# (0.454)
Cadmium ††	7440439		1*	2		X	1# (0.454)
Cadmium acetate	543908		100	1		B	100# (45.4)
CADMIUM AND COMPOUNDS.			1*	2			**
Cadmium bromide	7789426		100	1		B	100# (45.4)
Cadmium chloride	10108642		100	1		B	100# (45.4)
Calcium arsenate	7778441		1000	1		C	1000# (454)
Calcium arsenite	52740166		1000	1		C	1000# (454)
Calcium carbide	75207		5000	1		A	10 (4.54)
Calcium chromate	13765190	Chromic acid, calcium salt.	1000	1,4	U032	C	1000# (454)
Calcium cyanide	592018		10	1,4	P021	A	10 (4.54)
Calcium dodecylbenzene sulfonate.	26264062		1000	1		C	1000 (454)
Calcium hypochlorite	7778543		100	1		A	10(4.54)
Camphene, octachloro-	8001352	Toxaphene	1	1,2,4	P123	X	1# (0.454)
Captan	133062		10	1		A	10# (4.54)
Carbamic acid, ethyl ester.	51796	Ethyl carbamate (Urethan).	1*	4	U238	X	1# (0.454)
Carbamic acid, methylnitroso-,ethyl ester.	615532	N-Nitroso-N-methylurethane.	1*	4	U178	X	1# (0.454)
Carbamide, N-ethyl-N-nitroso-.	759739	N-Nitroso-N-ethylurea	1*	4	U176	X	1# (0.454)
Carbamide, N-methyl-N-nitroso-.	684935	N-Nitroso-N-methylurea	1*	4	U177	X	1# (0.454)
Carbamide, thio-	62566	Thiourea	1*	4	U219	X	1# (0.454)
Carbamimidoselenoic acid.	630104	Selenourea	1*	4	P103	C	1000 (454)
Carbamoyl chloride, dimethyl-.	79447	Dimethylcarbamoyl chloride.	1*	4	U097	X	1# (0.454)
Carbaryl	63252		100	1		B	100 (45.4)
Carbofuran	1563662		10	1		A	10 (4.54)
Carbon bisulfide	75150	Carbon disulfide	5000	1,4	P022	B	100 (45.4)
Carbon disulfide	75150	Carbon bisulfide	5000	1,4	P022	B	100 (45.4)
Carbonic acid, dithallium(I) salt.	6533739	Thallium(I) carbonate	1*	4	U215	B	100 (45.4)
Carbonochloridic acid, methyl ester.	79221	Methyl chlorocarbonate	1*	4	U156	C	1000 (454)
Carbon oxyfluoride	353504	Carbonyl fluoride	1*	4	U033	C	1000 (454)
Carbon tetrachloride	56235	Methane, tetrachloro-	5000	1,2,4	U211	D	5000# (2270)
Carbonyl chloride	75445	Phosgene	5000	1,4	P095	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Carbonyl fluoride	353504	Carbon oxyfluoride	1*	4	U033	C	1000 (454)
Chloral	75876	Acetaldehyde, trichloro-	1*	4	U034	X	1#(0.454)
Chlorambucil	305033	Butanoic acid, 4-[bis(2-chloroethyl)amino] benzene-	1*	4	U035	X	1# (0.454)
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES)			1*	2			**
Chlordane	57749	Chlordane, technical 4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro- 3a,4,7,7a-tetrahydro-	1	1,2,4	U036	X	1# (0.454)
Chlordane, technical	57749	Chlordane 4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro- 3a,4,7,7a-tetrahydro-	1	1,2,4	U036	X	1# (0.454)
CHLORINATED BENZENES			1*	2			**
CHLORINATED ETHANES			1*	2			**
CHLORINATED NAPHTHALENE			1*	2			**
CHLORINATED PHENOLS			1*	2			**
Chlorine	7782505		10	1		A	10 (4.54)
Chlorine cyanide	506774	Cyanogen chloride	10	1,4	P033	A	10 (4.54)
Chlornaphazine	494031	2-Naphthylamine, N,N-bis(2-chloroethyl)-	1*	4	U026	X	1# (0.454)
Chloroacetaldehyde	107200	Acetaldehyde, chloro-	1*	4	P023	C	1000 (454)
CHLOROALKYL ETHERS			1*	2			**
p-Chloroaniline	106478	Benzenamine, 4-chloro-	1*	4	P024	C	1000 (454)
Chlorobenzene	108907	Benzene, chloro-	100	1,2,4	U037	B	100 (45.4)
4-Chloro-m-cresol	59507	p-Chloro-m-cresol Phenol, 4-chloro-3-methyl-	1*	2,4	U039	D	5000 (2270)
p-Chloro-m-cresol	59507	4-Chloro-m-cresol Phenol, 4-chloro-3-methyl-	1*	2,4	U039	D	5000 (2270)
Chlorodibromomethane	124481		1*	2		B	100 (45.4)
1-Chloro-2,3-epoxypropane	106898	Epichlorohydrin Oxirane, 2-(chloromethyl)-	1000	1,4	U041	C	1000# (454)
Chloroethane	75003		1*	2		B	100 (45.4)
2-Chloroethyl vinyl ether	110758	Ethene, 2-chloroethoxy-	1*	2,4	U042	C	1000 (454)
Chloroform	67663	Methane, trichloro-	5000	1,2,4	U044	D	5000# (2270)
Chloromethyl methyl ether	107302	Methane, chloromethoxy-	1*	4	U046	X	1# (0.454)
beta-Chloronaphthalene	91587	2-Chloronaphthalene Naphthalene, 2-chloro-	1*	2,4	U047	D	5000 (2270)
2-Chloronaphthalene	91587	beta-Chloronaphthalene Naphthalene, 2-chloro-	1*	2,4	U047	D	5000 (2270)
2-Chlorophenol	95578	o-Chlorophenol Phenol, 2-chloro-	1*	2,4	U048	B	100 (45.4)
o-Chlorophenol	95578	2-Chlorophenol Phenol, 2-chloro-	1*	2,4	U048	B	100 (45.4)
4-Chlorophenyl phenyl ether	7005723		1*	2		D	5000 (2270)
1-(o-Chlorophenyl)thiourea	5344821	Thiourea, (2-chlorophenyl)-	1*	4	P026	B	100 (45.4)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
3-Chloropropionitrile	542767	Propanenitrile, 3-chloro-	1*	4	P027	C	1000 (454)
Chlorosulfonic acid	7790945		1000	1		C	1000 (454)
4-Chloro-o-toluidine, hydrochloride.	3165933	Benzenamine, 4-chloro-2-methyl-,hydrochloride.	1*	4	U049	X	1# (0.454)
Chlorpyrifos	2921882		1	1		X	1 (0.454)
Chromic acetate	1066304		1000	1		C	1000 (454)
Chromic acid	11115745 7738945		1000	1		C	1000# (454)
Chromic acid, calcium salt.	13765190	Calcium chromate	1000	1,4	U032	C	1000# (454)
Chromic sulfate	10101538		1000	1		C	1000 (454)
Chromium ††	7440473		1*	2		X	1# (0.454)
CHROMIUM AND COMPOUNDS.			1*	2			**
Chromous chloride	10049055		1000	1		C	1000 (454)
Chrysene	218019	1,2-Benzphenanthrene	1*	2,4	U050	X	1# (0.454)
Cobaltous bromide	7789437		1000	1		C	1000(454)
Cobaltous formate	544183		1000	1		C	1000 (454)
Cobaltous sulfamate	14017415		1000	1		C	1000 (454)
Coke Oven Emissions	N.A.		1*	3		X	1# (0.454)
Copper ††	7440508		1*	2		D	5000 (2270)
COPPER AND COMPOUNDS.			1*	2			**
Copper cyanide	544923		1*	4	P029	A	10 (4.54)
Coumaphos	56724		10	1		A	10 (4.54)
Creosote	8001589		1*	4	U051	X	1# (0.454)
Cresol(s)	1319773	Cresylic acid	1000	1,4	U052	C	1000# (454)
m-	108394						
o-	95487						
p-	106445						
Cresylic acid	1319773	Cresol(s)	1000	1,4	U052	C	1000# (454)
m-	108394						
o-	95487						
p-	106445						
Crotonaldehyde	123739 4170303	2-Butenal	100	1,4	U053	B	100 (45.4)
Cumene	98828	Benzene, 1-methylethyl-	1*	4	U055	D	5000 (2270)
Cupric acetate	142712		100	1		B	100 (45.4)
Cupric acetoarsenite	12002038		100	1		B	100# (45.4)
Cupric chloride	7447394		10	1		A	10 (4.54)
Cupric nitrate	3251238		100	1		B	100 (45.4)
Cupric oxalate	5893663		100	1		B	100 (45.4)
Cupric sulfate	7758987		10	1		A	10 (4.54)
Cupric sulfate ammoniated.	10380297		100	1		B	100 (45.4)
Cupric tartrate	815827		100	1		B	100 (45.4)
CYANIDES			1*	2			**
Cyanides (soluble cyanide salts), not elsewhere specified.	57125		1*	4	P030	A	10 (4.54)
Cyanogen	460195		1*	4	P031	B	100 (45.4)
Cyanogen bromide	506683	Bromine cyanide	1*	4	U246	C	1000 (454)
Cyanogen chloride	506774	Chlorine cyanide	10	1,4	P033	A	10 (4.54)
1,4-Cyclohexadienedione	106514	p-Benzoquinone	1*	4	U197	A	10 (4.54)
Cyclohexane	110827	Benzene, hexahydro-	1000	1,4	U056	C	1000(454)
Cyclohexanone	108941		1*	4	U057	D	5000 (2270)
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-.	77474	Hexachlorocyclopentadiene.	1	1,2,4	U130	X	1# (0.454)
Cyclophosphamide	50180	2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino] tetrahydro-2-oxide.	1*	4	U058	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
2,4-D Acid	94757	2,4-D, salts and esters 2,4-Dichlorophenoxyacetic acid, salts and esters	100	1,4	U240	B	100 (45.4)
2,4-D Esters	94111 94791 94804 1320189 1928387 1928616 1929733 2971382 25168267 53467111		100	1		B	100 (45.4)
2,4-D, salts and esters	94757	2,4-D Acid 2,4-Dichlorophenoxyacetic acid, salts and esters	100	1,4	U240	B	100 (45.4)
Daunomycin	20830813	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[3-amino- 2,3,6-trideoxy- alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy- 1-methoxy-.	1*	4	U059	X	1# (0.454)
DDD	72548	4,4' DDD Dichlorodiphenyl dichloroethane TDE	1	1,2,4	U060	X	1# (0.454)
4,4' DDD	72548	DDD Dichlorodiphenyl dichloroethane TDE	1	1,2,4	U060	X	1# (0.454)
DDE	72559	4,4' DDE	1*	2		X	1# (0.454)
4,4' DDE	72559	DDE	1*	2		X	1# (0.454)
DDT	50293	4,4' DDT Dichlorodiphenyl trichloroethane	1	1,2,4	U061	X	1# (0.454)
4,4'DDT	50293	DDT Dichlorodiphenyl trichloroethane	1	1,2,4	U061	X	1# (0.454)
DDT AND METABOLITES.			1*	2			**
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one.	143500	Kepone	1	1,4	U142	X	1# (0.454)
Diallate	2303164	S-(2,3-Dichloroallyl) diisopropylthiocarbamate.	1*	4	U062	X	1# (0.454)
Diamine	302012	Hydrazine	1*	4	U133	X	1# (0.454)
Diaminotoluene	95807 25376458 496720 823405	Toluenediamine	1*	4	U221	X	1# (0.454)
Diazinon	5333415		1	1		X	1 (0.454)
Dibenz[a,h]anthracene	53703	1,2:5,6-Dibenzanthracene. Dibenzo[a,h]anthracene	1*	2,4	U063	X	1# (0.454)
1,2:5,6-Dibenzanthracene.	53703	Dibenz[a,h]anthracene Dibenzo[a,h]anthracene	1*	2,4	U063	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Dibenzo[a,h]anthracene	53703	Dibenz[a,h]anthracene 1,2:5,6-Dibenzanthracene	1*	2,4	U063	X	1# (0.454)
1,2:7,8-Dibenzopyrene	189559	Dibenz[a,i]pyrene	1*	4	U064	X	1# (0.454)
Dibenz[a,i]pyrene	189559	1,2:7,8-Dibenzopyrene	1*	4	U064	X	1#(0.454)
1,2-Dibromo-3-chloropropane.	96128	Propane, 1,2-dibromo-3-chloro-.	1*	4	U066	X	1# (0.454)
Dibutyl phthalate	84742	1,2-Benzenedicarboxylic acid,dibutyl ester. Di-n-butyl phthalate n-Butyl phthalate	100	1,2,4	U069	A	10 (4.54)
Di-n-butyl phthalate	84742	1,2-Benzenedicarboxylic acid,dibutyl ester. n-Butyl phthalate Dibutyl phthalate	100	1,2,4	U069	A	10 (4.54)
Dicamba	1918009		1000	1		C	1000 (454)
Dichlobenil	1194656		1000	1		B	100 (45.4)
Dichlone	117806		1	1		X	1 (0.454)
S-(2,3-Dichloroallyl) diisopropylthiocarbamate.	2303164	Diallate	1*	4	U062	X	1# (0.454)
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide.	23950585	Pronamide	1*	4	U192	D	5000 (2270)
Dichlorobenzene (mixed)	25321226		100	1		B	100 (45.4)
1,2-Dichlorobenzene	95501	Benzene, 1,2-dichloro- o-Dichlorobenzene	100	1,2,4	U070	B	100 (45.4)
1,3-Dichlorobenzene	541731	Benzene, 1,3-dichloro- m-Dichlorobenzene	1*	2,4	U071	B	100 (45.4)
1,4-Dichlorobenzene	106467	Benzene, 1,4-dichloro- p-Dichlorobenzene	100	1,2,4	U072	B	100 (45.4)
m-Dichlorobenzene	541731	Benzene, 1,3 dichloro- 1,3-Dichlorobenzene	1*	2,4	U071	B	100 (45.4)
o-Dichlorobenzene	95501	Benzene, 1,2-dichloro- 1,2-Dichlorobenzene	100	1,2,4	U070	B	100 (45.4)
p-Dichlorobenzene	106467	Benzene, 1,4-dichloro- 1,4-Dichlorobenzene	100	1,2,4	U072	B	100 (45.4)
DICHLOROBENZIDINE			1*	2			**
3,3'-Dichlorobenzidine	91941	(1,1'-Biphenyl)-4,4'diamine,3,3'dichloro-	1*	2,4	U073	X	1# (0.454)
Dichlorobromomethane	75274		1*	2		D	5000 (2270)
1,4-Dichloro-2-butene	764410	2-Butene, 1,4-dichloro-	1*	4	U074	X	1 (0.454)
Dichlorodifluoromethane	75718	Methane, dichlorodifluoro-.	1*	4	U075	D	5000 (2270)
Dichlorodiphenyl dichloroethane.	72548	DDD 4,4' DDD TDE	1	1,2,4	U060	X	1# (0.454)
Dichlorodiphenyl trichloroethane.	50293	DDT 4,4'DDT	1	1,2,4	U061	X	1# (0.454)
1,1-Dichloroethane	75343	Ethane, 1,1-dichloro- Ethylidene dichloride	1*	2,4	U076	C	1000 (454)
1,2-Dichloroethane	107062	Ethane, 1,2-dichloro- Ethylene dichloride	5000	1,2,4	U077	D	5000# (2270)
1,1-Dichloroethylene	75354	Ethene, 1,1-dichloro- Vinylidene chloride	5000	1,2,4	U078	D	5000# (2270)
1,2-trans-Dichloroethylene.	156605	Ethene, trans-1,2-dichloro-.	1*	2,4	U079	C	1000 (454)
Dichloroethyl ether	111444	Bis (2-chloroethyl) ether Ethane, 1,1'-oxybis(2-chloro-	1*	2,4	U025	X	1# (0.454)
2,4-Dichlorophenol	120832	Phenol, 2,4-dichloro-	1*	2,4	U081	B	100 (45.4)
2,6-Dichlorophenol	87650	Phenol, 2,6-dichloro-	1*	4	U082	B	100 (45.4)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
2,4-Dichlorophenoxyacetic acid, salts and esters.	94757	2,4-D Acid 2,4-D, salts and esters	100	1,4	U240	B	100 (45.4)
Dichlorophenylarsine	696286	Phenyl dichloroarsine	1*	4	P036	X	1# (0.454)
Dichloropropane	26638197		5000	1		C	1000 (454)
1,1-Dichloropropane	78999						
1,3-Dichloropropane	142289						
1,2-Dichloropropane	78875	Propylene dichloride	5000	1,2,4	U083	C	1000 (454)
Dichloropropane - Dichloropropene (mixture).	8003198		5000	1		B	100# (45.4)
Dichloropropene(s)	26952238		5000	1		B	100 (45.4)
2,3-Dichloropropene (isomer).	78886						
1,3-Dichloropropene	542756	Propene, 1,3-dichloro-	5000	1,2,4	U084	B	100# (45.4)
2,2-Dichloropropionic acid.	75990		5000	1		D	5000 (2270)
Dichlorvos	62737		10	1		A	10 (4.54)
Dieldrin	60571	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	1	1,2,4	P037	X	1# (0.454)
1,2:3,4-Diepoxybutane	1464535	2,2'-Bioxirane	1*	4	U085	X	1# (0.454)
Diethylamine	109897		1000	1		B	100 (45.4)
Diethylarsine	692422	Arsine, diethyl-	1*	4	P038	X	1# (0.454)
1,4-Diethylene dioxide	123911	1,4-Dioxane	1*	4	U108	X	1# (0.454)
N,N'-Diethylhydrazine	1615801	Hydrazine, 1,2-diethyl-	1*	4	U086	X	1# (0.454)
O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate.	298044	Disulfoton	1	1,4	P039	X	1 (0.454)
O,O-Diethyl S-methyl dithiophosphate.	3288582	Phosphorodithioic acid, O,O-diethyl S-methylester.	1*	4	U087	D	5000 (2270)
Diethyl-p-nitrophenyl phosphate.	311455	Phosphoric acid,diethyl p-nitrophenyl ester.	1*	4	P041	B	100 (45.4)
Diethyl phthalate	84662	1,2-Benzenedicarboxylic acid,diethyl ester.	1*	2,4	U088	C	1000 (454)
O,O-Diethyl O-pyrazinyl phosphorothioate.	297972	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.	1*	4	P040	B	100 (45.4)
Diethylstilbestrol	56531	4,4'-Stilbenediol, alpha,alpha'-diethyl-.	1*	4	U089	X	1# (0.454)
1,2-Dihydro-3,6-pyridazinedione.	123331	Maleic hydrazide	1*	4	U148	D	5000 (2270)
Dihydrosafrole	94586	Benzene, 1,2-methylenedioxy-4-propyl-.	1*	4	U090	X	1# (0.454)
Diisopropyl fluorophosphate.	55914	Phosphorofluoridic acid,bis(1-methylethyl) ester.	1*	4	P043	B	100 (45.4)
Dimethoate	60515	Phosphorodithioic acid,O,O-dimethyl S-[2(methylamino)- 2-oxoethyl] ester.	1*	4	P044	A	10 (4.54)
3,3'-Dimethoxybenzidine	119904	(1,1'-Biphenyl)-4,4'diamine,3,3' dimethoxy-.	1*	4	U091	X	1# (0.454)
Dimethylamine	124403	Methanamine, N-methyl-	1000	1,4	U092	C	1000 (454)
7,12-Dimethylbenz[a] anthracene.	57976	1,2-Benzanthracene, 7,12-dimethyl-.	1*	4	U094	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
3,3'-Dimethylbenzidine	119937	(1,1'Biphenyl)-4,4'-diamine,3,3'-dimethyl-.	1*	4	U095	X	1# (0.454)
alpha,alpha-Dimethylbenzylhydroperoxide.	80159	Hydroperoxide, 1-methyl-1-phenylethyl-.	1*	4	U096	A	10 (4.54)
3,3-Dimethyl-1-(methylthio)-2-butanone, O-[(methylamino) carbonyl] oxime.	39196184	Thiofanox	1*	4	P045	B	100 (45.4)
Dimethylcarbamoyl chloride.	79447	Carbamoyl chloride, dimethyl-.	1*	4	U097	X	1# (0.454)
1,1-Dimethylhydrazine	57147	Hydrazine, 1,1-dimethyl-	1*	4	U098	X	1# (0.454)
1,2-Dimethylhydrazine	540738	Hydrazine, 1,2-dimethyl-	1*	4	U099	X	1# (0.454)
O,O-Dimethyl O-p-nitrophenyl phosphorothioate.	298000	Methyl parathion	100	1,4	P071	B	100 (45.4)
Dimethylnitrosamine	62759	N-Nitrosodimethylamine	1*	2,4	P082	X	1# (0.454)
alpha,alpha-Dimethylphenethylamine.	122098	Ethanamine, 1,1-dimethyl-2-phenyl-.	1*	4	P046	D	5000 (2270)
2,4-Dimethylphenol	105679	Phenol, 2,4-dimethyl-	1*	2,4	U101	B	100 (45.4)
Dimethyl phthalate	131113	1,2-Benzenedicarboxylic acid,dimethyl ester.	1*	2,4	U102	D	5000 (2270)
Dimethyl sulfate	77781	Sulfuric acid, dimethyl ester.	1*	4	U103	X	1# (0.454)
Dinitrobenzene (mixed)	25154545		1000	1		B	100 (45.4)
m-	99650						
o-	528290						
p-	100254						
4,6-Dinitro-o-cresol and salts.	534521	Phenol, 2,4-dinitro-6-methyl-, and salts.	1*	2,4	P047	A	10 (4.54)
4,6-Dinitro-o-cyclohexylphenol.	131895	Phenol, 2-cyclohexyl-4,6-dinitro-.	1*	4	P034	B	100 (45.4)
Dinitrophenol	25550587		1000	1		A	10 (4.54)
2,5-	329715						
2,6-	573568						
2,4-Dinitrophenol	51285	Phenol, 2,4-dinitro-	1000	1,2,4	P048	A	10 (4.54)
Dinitrotoluene	25321146		1000	1,2		C	1000# (454)
3,4-Dinitrotoluene	610399						
2,4-Dinitrotoluene	121142	Benzene, 1-methyl-2,4-dinitro-.	1000	1,2,4	U105	C	1000# (454)
Dinoseb	88857	Phenol, 2,4-dinitro-6-(1-methylpropyl)-.	1*	4	P020	C	1000 (454)
Di-n-octyl phthalate	117840	1,2-Benzenedicarboxylic acid,di-n-octyl ester.	1*	2,4	U107	D	5000 (2270)
1,4-Dioxane	123911	1,4-Diethylene dioxide	1*	4	U108	X	1# (0.454)
DIPHENYLHYDRAZINE			1*	2			**
1,2-Diphenylhydrazine	122667	Hydrazine, 1,2-diphenyl-	1*	2,4	U109	X	1# (0.454)
Diphosphoramide, octamethyl-.	152169	Octamethylpyrophosphoramide.	1*	4	P085	B	100 (45.4)
Dipropylamine	142847	1-Propanamine, N-propyl-.	1*	4	U110	D	5000 (2270)
Di-n-propylnitrosamine	621647	N-Nitrosodi-n-propylamine.	1*	2,4	U111	X	1# (0.454)
Diquat	85007 2764729		1000	1		C	1000 (454)
Disulfoton	298044	O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate.	1	1,4	P039	X	1 (0.454)
2,4-Dithiobiuret	541537	Thioimidodicarbonic diamide.	1*	4	P049	B	100 (45.4)
Dithiopyrophosphoric acid, tetraethyl ester.	3689245	Tetraethyldithiopyrophosphate.	1*	4	P109	B	100 (45.4)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Diuron	330541		100	1		B	100 (45.4)
Dodecylbenzenesulfonic acid.	27176870		1000	1		C	1000 (454)
Endosulfan	115297	5-Norbornene-2,3-dimethanol,1,4,5,6,7,7-hexachloro, cyclic sulfite.	1	1,2,4	P050	X	1 (0.454)
alpha - Endosulfan	959988		1*	2		X	1 (0.454)
beta - Endosulfan	33213659		1*	2		X	1 (0.454)
ENDOSULFAN AND METABOLITES.			1*	2			**
Endosulfan sulfate	1031078		1*	2		X	1 (0.454)
Endothall	145733	7-Oxabicyclo[2,2,1] heptane-2,3-dicarboxylic acid.	1*	4	P088	C	1000 (454)
Endrin	72208	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene.	1	1,2,4	P051	X	1 (0.454)
Endrin aldehyde	7421934		1*	2		X	1 (0.454)
ENDRIN AND METABOLITES.			1*	2			**
Epichlorohydrin	106898	1-Chloro-2,3-epoxypropane. Oxirane, 2-(chloromethyl)-	1000	1,4	U041	C	1000# (454)
Epinephrine	51434	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-.	1*	4	P042	C	1000 (454)
Ethanal	75070	Acetaldehyde	1000	1,4	U001	C	1000 (454)
Ethanamine, 1,1-dimethyl-2-phenyl-.	122098	alpha,alpha-Dimethylphenethylamine.	1*	4	P046	D	5000 (2270)
Ethanamine, N-ethyl-N-nitroso-.	55185	N-Nitrosodiethylamine	1*	4	U174	X	1# (0.454)
Ethane, 1,2-dibromo-	106934	Ethylene dibromide	1000	1,4	U067	C	1000# (454)
Ethane, 1,1-dichloro-	75343	1,1-Dichloroethane Ethylidene dichloride	1*	2,4	U076	C	1000 (454)
Ethane, 1,2-dichloro-	107062	1,2-Dichloroethane Ethylene dichloride	5000	1,2,4	U077	D	5000# (2270)
Ethane, 1,1,1,2,2,2-hexachloro-.	67721	Hexachloroethane	1*	2,4	U131	X	1# (0.454)
Ethane, 1,1'-[methylenebis(oxy)] bis(2-chloro-.	111911	Bis(2-chloroethoxy) methane.	1*	2,4	U024	C	1000 (454)
Ethane, 1,1'-oxybis-	60297	Ethyl ether	1*	4	U117	B	100 (45.4)
Ethane, 1,1'-oxybis(2-chloro-.	111444	Bis (2-chloroethyl) ether Dichloroethyl ether	1*	2,4	U025	X	1# (0.454)
Ethane, pentachloro-	76017	Pentachloroethane	1*	4	U184	X	1# (0.454)
Ethane, 1,1,1,2-tetrachloro-.	630206	1,1,1,2-Tetrachloroethane.	1*	4	U208	X	1# (0.454)
Ethane, 1,1,2,2-tetrachloro-.	79345	1,1,2,2-Tetrachloroethane.	1*	2,4	U209	X	1# (0.454)
Ethane, 1,1,2-trichloro-	79005	1,1,2-Trichloroethane	1*	2,4	U227	X	1# (0.454)
Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-.	72435	Methoxychlor	1	1,4	U247	X	1 (0.454)
1,2-Ethanediylbiscarbamodithioic acid.	111546	Ethylenebis (dithiocarbamic acid).	1*	4	U114	D	5000 (2270)
Ethanenitrile	75058	Acetonitrile	1*	4	U003	D	5000 (2270)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Ethanethioamide	62555	Thioacetamide	1*	4	U218	X	1# (0.454)
Ethanol, 2,2'-(nitrosoimino)bis-.	1116547	N-Nitrosodiethanolamine	1*	4	U173	X	1# (0.454)
Ethanone, 1-phenyl-	98862	Acetophenone	1*	4	U004	D	5000 (2270)
Ethanoyl chloride	75365	Acetyl chloride	5000	1,4	U006	D	5000 (2270)
Ethenamine, N-methyl-N-nitroso .	4549400	N-Nitrosomethylvinylamine.	1*	4	P084	X	1# (0.454)
Ethene, chloro-	75014	Vinyl chloride	1*	2,3,4	U043	X	1# (0.454)
Ethene, 2-chloroethoxy-	110758	2-Chloroethyl vinyl ether	1*	2,4	U042	C	1000 (454)
Ethene, 1,1-dichloro-	75354	1,1-Dichloroethylene Vinylidene chloride	5000	1,2,4	U078	D	5000# (2270)
Ethene, 1,1,2,2-tetrachloro-.	127184	Tetrachloroethylene	1*	2,4	U210	X	1# (0.454)
Ethene, trans-1,2-dichloro-.	156605	1,2-trans-Dichloroethylene.	1*	2,4	U079	C	1000 (454)
Ethion	563122		10	1		A	10 (4.54)
2-Ethoxyethanol	110805	Ethylene glycol monoethyl ether.	1*	4	U359	X	1# (0.454)
Ethyl acetate	141786	Acetic acid, ethyl ester	1*	4	U112	D	5000 (2270)
Ethyl acrylate	140885	2-Propenoic acid, ethyl ester.	1*	4	U113	C	1000 (454)
Ethylbenzene	100414		1000	1,2		C	1000 (454)
Ethyl carbamate (Urethan).	51796	Carbamic acid, ethyl ester.	1*	4	U238	X	1# (0.454)
Ethyl cyanide	107120	Propanenitrile	1*	4	P101	A	10 (4.54)
Ethyl 4,4'-dichlorobenzilate.	510156	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)- alpha-hydroxy-, ethyl ester.	1*	4	U038	X	1# (0.454)
Ethylene dibromide	106934	Ethane, 1,2-dibromo-	1000	1,4	U067	C	1000# (454)
Ethylene dichloride	107062	1,2-Dichloroethane Ethane, 1,2-dichloro-	5000	1,2,4	U077	D	5000# (2270)
Ethylene glycol monoethyl ether.	110805	2-Ethoxyethanol	1*	4	U359	X	1# (0.454)
Ethylene oxide	75218	Oxirane	1*	4	U115	X	1# (0.454)
Ethylenebis (dithiocarbamic acid).	111546	1,2-Ethanediylbiscarbamodithioic acid.	1*	4	U114	D	5000 (2270)
Ethylenediamine	107153		1000	1		D	5000 (2270)
Ethylenediamine tetraacetic acid (EDTA).	60004		5000	1		D	5000 (2270)
Ethylenethiourea	96457	2-Imidazolidinethione	1*	4	U116	X	1# (0.454)
Ethylenimine	151564	Aziridine	1*	4	P054	X	1# (0.454)
Ethyl ether	60297	Ethane, 1,1'-oxybis-	1*	4	U117	B	100 (45.4)
Ethylidene dichloride	75343	1,1-Dichloroethane Ethane, 1,1-dichloro-	1*	2,4	U076	C	1000 (454)
Ethyl methacrylate	97632	2-Propenoic acid, 2-methyl-, ethyl ester.	1*	4	U118	C	1000 (454)
Ethyl methanesulfonate	62500	Methanesulfonic acid, ethyl ester.	1*	4	U119	X	1# (0.454)
Famphur	52857	Phosphorothioic acid, O,O-dimethyl-O-[p-[(dimethylamino)-sulfonyl]phenyl] ester.	1*	4	P097	C	1000 (454)
Ferric ammonium citrate	1185575		1000	1		C	1000 (454)
Ferric ammonium oxalate.	2944674 55488874		1000	1		C	1000 (454)
Ferric chloride	7705080		1000	1		C	1000 (454)
Ferric fluoride	7783508		100	1		B	100 (45.4)
Ferric nitrate	10421484		1000	1		C	1000 (454)
Ferric sulfate	10028225		1000	1		C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Ferrous ammonium sulfate.	10045893		1000	1		C	1000 (454)
Ferrous chloride	7758943		100	1		B	100 (45.4)
Ferrous sulfate	7720787 7782630		1000	1		C	1000 (454)
Fluoroacetic acid, sodium salt.	62748	Acetic acid, fluoro-, sodium salt.	1*	4	P058	A	10 (4.54)
Fluoranthene	206440	Benzo[j,k]fluorene	1*	2,4	U120	B	100 (45.4)
Fluorene	86737		1*	2		D	5000 (2270)
Fluorine	7782414		1*	4	P056	A	10 (4.54)
Fluoroacetamide	640197	Acetamide, 2-fluoro-	1*	4	P057	B	100 (45.4)
Formaldehyde	50000	Methylene oxide	1000	1,4	U122	C	1000# (454)
Formic acid	64186	Methanoic acid	5000	1,4	U123	D	5000 (2270)
Fulminic acid, mercury(II) salt.	628864	Mercury fulminate	1*	4	P065	A	10 (4.54)
Fumaric acid	110178		5000	1		D	5000 (2270)
Furan	110009	Furfuran	1*	4	U124	B	100 (45.4)
Furan, tetrahydro-	109999	Tetrahydrofuran	1*	4	U213	C	1000 (454)
2-Furancarboxaldehyde	98011	Furfural	1000	1,4	U125	D	5000 (2270)
2,5-Furandione	108316	Maleic anhydride	5000	1,4	U147	D	5000 (2270)
Furfural	98011	2-Furancarboxaldehyde	1000	1,4	U125	D	5000 (2270)
Furfuran	110009	Furan	1*	4	U124	B	100 (45.4)
D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-.	18883664	Streptozotocin	1*	4	U206	X	1# (0.454)
Glycidylaldehyde	765344	1-Propenal, 2,3-epoxy-	1*	4	U126	X	1# (0.454)
Guanidine, N-nitroso-N-methyl-N'-nitro-.	70257	N-Methyl-N'-nitro-N-nitrosoguanidine.	1*	4	U163	X	1# (0.454)
Guthion	86500		1	1		X	1 (0.454)
HALOETHERS			1*	2			**
HALOMETHANES			1*	2			**
Heptachlor	76448	4,7-Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-.	1	1,2,4	P059	X	1#(0.454)
HEPTACHLOR AND METABOLITES.			1*	2			**
Heptachlor epoxide	1024573		1*	2		X	1# (0.454)
Hexachlorobenzene	118741	Benzene, hexachloro-	1*	2,4	U127	X	1# (0.454)
Hexachlorobutadiene	87683	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-.	1*	2,4	U128	X	1# (0.454)
HEXACHLOROCYCLOHEXANE (all isomers).	608731		1*	2			**
Hexachlorocyclohexane (gamma isomer)	58899	gamma - BHC Lindane	1	1,2,4	U129	X	1# (0.454)
Hexachlorocyclopentadiene.	77474	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-.	1	1,2,4	U130	X	1# (0.454)
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene.	72208	Endrin	1	1,2,4	P051	X	1 (0.454)
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	60571	Dieldrin	1	1,2,4	P037	X	1# (0.454)
Hexachloroethane	67721	Ethane, 1,1,1,2,2,2-hexachloro-.	1*	2,4	U131	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Hexachlorohexahydro-endo,endo-dimethanonaphthalene.	465736	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro- 1,4,5,8-endo,endo-dimethanonaphthalene.	1*	4	P060	X	1 (0.454)
1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro- 1,4,5,8-endo,endo-dimethanonaphthalene.	465736	Hexachlorohexahydro-endo,endo-dimethanonaphthalene.	1*	4	P060	X	1 (0.454)
1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, exo-dimethanonaphthalene.	309002	Aldrin	1	1,2,4	P004	X	1# (0.454)
Hexachlorophene	70304	2,2'-Methylenebis(3,4,6-trichlorophenol).	1*	4	U132	B	100 (45.4)
Hexachloropropene	1888717	1-Propene, 1,1,2,3,3,3-hexachloro-.	1*	4	U243	C	1000 (454)
Hexaethyl tetraphosphate.	757584	Tetraphosphoric acid, hexaethyl ester.	1*	4	P062	B	100 (45.4)
Hydrazine	302012	Diamine	1*	4	U133	X	1# (0.454)
Hydrazine, 1,2-diethyl-	1615801	N,N'-Diethylhydrazine	1*	4	U086	X	1# (0.454)
Hydrazine, 1,1-dimethyl-	57147	1,1-Dimethylhydrazine	1*	4	U098	X	1# (0.454)
Hydrazine, 1,2-dimethyl-	540738	1,2-Dimethylhydrazine	1*	4	U099	X	1# (0.454)
Hydrazine, 1,2-diphenyl-	122667	1,2-Diphenylhydrazine	1*	2,4	U109	X	1# (0.454)
Hydrazine, methyl-	60344	Methyl hydrazine	1*	4	P068	A	10 (4.54)
Hydrazinecarbothioamide	79196	Thiosemicarbazide	1*	4	P116	B	100 (45.4)
Hydrochloric acid	7647010		5000	1		D	5000 (2270)
Hydrocyanic acid	74908	Hydrogen cyanide	10	1,4	P063	A	10 (4.54)
Hydrofluoric acid	7664393	Hydrogen fluoride	5000	1,4	U134	B	100 (45.4)
Hydrogen cyanide	74908	Hydrocyanic acid	10	1,4	P063	A	10 (4.54)
Hydrogen fluoride	7664393	Hydrofluoric acid	5000	1,4	U134	B	100 (45.4)
Hydrogen phosphide	7803512	Phosphine	1*	4	P096	B	100 (45.4)
Hydrogen sulfide	7783064	Hydrosulfuric acid Sulfur hydride	100	1,4	U135	B	100 (45.4)
Hydroperoxide, 1-methyl-1-phenylethyl-.	80159	alpha,alpha-Dimethylbenzylhydroperoxide.	1*	4	U096	A	10 (4.54)
Hydrosulfuric acid	7783064	Hydrogen sulfide Sulfur hydride	100	1,4	U135	B	100 (45.4)
Hydroxydimethylarsine oxide.	75605	Cacodylic acid	1*	4	U136	X	1# (0.454)
2-Imidazolidinethione	96457	Ethylenethiourea	1*	4	U116	X	1# (0.454)
Indeno(1,2,3-cd)pyrene	193395	1,10-(1,2-Phenylene)pyrene.	1*	2,4	U137	X	1# (0.454)
Isobutyl alcohol	78831	1-Propanol, 2-methyl-	1*	4	U140	D	5000 (2270)
Isocyanic acid, methyl ester.	624839	Methyl isocyanate	1*	4	P064	X	1###(0.454)
Isophorone	78591		1*	2		D	5000 (2270)
Isoprene	78795		1000	1		B	100 (45.4)
Isopropanolamine dodecylbenzenesulfonate.	42504461		1000	1		C	1000 (454)
Isosafrole	120581	Benzene, 1,2-methylenedioxy-4-propenyl-.	1*	4	U141	X	1# (0.454)
3(2H)-Isoxazolone, 5-(aminomethyl)-.	2763964	5-(Aminomethyl)-3-isoxazolol.	1*	4	P007	C	1000 (454)
Kelthane	115322		5000	1		A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Kepone	143500	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one.	1	1,4	U142	X	1# (0.454)
Lasiocarpine	303344		1*	4	U143	X	1# (0.454)
Lead ††	7439921		1*	2		X	1# (0.454)
Lead acetate	301042	Acetic acid, lead salt	5000	1,4	U144	D	5000# (2270)
LEAD AND COMPOUNDS.			1*	2			**
Lead arsenate	7784409 7645252 10102484		5000	1		D	5000# (2270)
Lead chloride	7758954		5000	1		B	100# (45.4)
Lead fluoborate	13814965		5000	1		B	100# (45.4)
Lead fluoride	7783462		1000	1		B	100# (45.4)
Lead iodide	10101630		5000	1		B	100# (45.4)
Lead nitrate	10099748		5000	1		B	100# (45.4)
Lead phosphate	7446277	Phosphoric acid, lead salt.	1*	4	U145	X	1# (0.454)
Lead stearate	7428480 1072351 52652592 56189094		5000	1		D	5000# (2270)
Lead subacetate	1335326		1*	4	U146	X	1# (0.454)
Lead sulfate	15739807 7446142		5000	1		B	100# (45.4)
Lead sulfide	1314870		5000	1		D	5000# (2270)
Lead thiocyanate	592870		5000	1		B	100# (45.4)
Lindane	58899	gamma - BHC Hexachlorocyclohexane (gamma isomer)	1	1,2,4	U129	X	1# (0.454)
Lithium chromate	14307358		1000	1		C	1000# (454)
Malathion	121755		10	1		B	100 (45.4)
Maleic acid	110167		5000	1		D	5000 (2270)
Maleic anhydride	108316	2,5-Furandione	5000	1,4	U147	D	5000 (2270)
Maleic hydrazide	123331	1,2-Dihydro-3,6-pyridazinedione.	1*	4	U148	D	5000 (2270)
Malononitrile	109773	Propanedinitrile	1*	4	U149	C	1000 (454)
Melphalan	148823	Alanine, 3-[p-bis(2-chloroethyl)amino] phenyl-,L-.	1*	4	U150	X	1# (0.454)
Mercaptodimethur	2032657		100	1		A	10 (4.54)
Mercuric cyanide	592041		1	1		X	1 (0.454)
Mercuric nitrate	10045940		10	1		A	10 (4.54)
Mercuric sulfate	7783359		10	1		A	10 (4.54)
Mercuric thiocyanate	592858		10	1		A	10 (4.54)
Mercurous nitrate	10415755		10	1		A	10 (4.54)
Mercury	7439976		1*	2,3,4	U151	X	1 (0.454)
MERCURY AND COMPOUNDS.			1*	2			**
Mercury, (acetato-O)phenyl-.	62384	Phenylmercuric acetate	1*	4	P092	B	100 (45.4)
Mercury fulminate	628864	Fulminic acid, mercury(II) salt.	1*	4	P065	A	10 (4.54)
Methacrylonitrile	126987	2-Propenenitrile, 2-methyl-.	1*	4	U152	C	1000 (454)
Methanamine, N-methyl-	124403	Dimethylamine	1000	1,4	U092	C	1000 (454)
Methane, bromo-	74839	Methyl bromide	1*	2,4	U029	C	1000 (454)
Methane, chloro-	74873	Methyl chloride	1*	2,4	U045	X	1# (0.454)
Methane, chloromethoxy-.	107302	Chloromethyl methyl ether.	1*	4	U046	X	1# (0.454)
Methane, dibromo-	74953	Methylene bromide	1*	4	U068	C	1000 (454)
Methane, dichloro-	75092	Methylene chloride	1*	2,4	U080	C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Methane, dichlorodifluoro-.	75718	Dichlorodifluoromethane	1*	4	U075	D	5000 (2270)
Methane, iodo-	74884	Methyl iodide	1*	4	U138	X	1# (0.454)
Methane, oxybis(chloro-	542881	Bis(chloromethyl) ether	1*	4	P016	X	1# (0.454)
Methane, tetrachloro-	56235	Carbon tetrachloride	5000	1,2,4	U211	D	5000# (2270)
Methane, tetranitro-	509148	Tetranitromethane	1*	4	P112	A	10 (4.54)
Methane, tribromo-	75252	Bromoform	1*	2,4	U225	B	100 (45.4)
Methane, trichloro-	67663	Chloroform	5000	1,2,4	U044	D	5000# (2270)
Methane, trichlorofluoro-	75694	Trichloromonofluoromethane.	1*	4	U121	D	5000 (2270)
Methanesulfonic acid, ethyl ester.	62500	Ethyl methanesulfonate	1*	4	U119	X	1# (0.454)
Methanethiol	74931	Methylmercaptan Thiomethanol	100	1,4	U153	B	100 (45.4)
Methanesulfenyl chloride, trichloro-.	594423	Trichloromethanesulfenyl chloride.	1*	4	P118	B	100 (45.4)
4,7-Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-.	76448	Heptachlor	1	1,2,4	P059	X	1# (0.454)
Methanoic acid	64186	Formic acid	5000	1,4	U123	D	5000 (2270)
4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro- 3a,4,7,7a-tetrahydro-.	57749	Chlordane Chlordane, technical	1	1,2,4	U036	X	1# (0.454)
Methanol	67561	Methyl alcohol	1*	4	U154	D	5000 (2270)
Methapyrilene	91805	Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylamino]-.	1*	4	U155	D	5000 (2270)
Methomyl	16752775	Acetimidic acid, N-[(methylcarbamoyl)oxy] thio-, methyl ester.	1*	4	P066	B	100 (45.4)
Methoxychlor	72435	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-.	1	1,4	U247	X	1 (0.454)
Methyl alcohol	67561	Methanol	1*	4	U154	D	5000 (2270)
2-Methylaziridine	75558	1,2-Propylenimine	1*	4	P067	X	1# (0.454)
Methyl bromide	74839	Methane, bromo-	1*	2,4	U029	C	1000 (454)
1-Methylbutadiene	504609	1,3-Pentadiene	1*	4	U186	B	100 (45.4)
Methyl chloride	74873	Methane, chloro-	1*	2,4	U045	X	1# (0.454)
Methyl chlorocarbonate	79221	Carbonochloridic acid, methyl ester.	1*	4	U156	C	1000 (454)
Methyl chloroform	71556	1,1,1-Trichloroethane	1*	2,4	U226	C	1000 (454)
4,4'-Methylenebis(2-chloroaniline).	101144	Benzenamine, 4,4'-methylenebis(2-chloro-.	1*	4	U158	X	1# (0.454)
2,2'-Methylenebis(3,4,6-trichlorophenol).	70304	Hexachlorophene	1*	4	U132	B	100 (45.4)
3-Methylcholanthrene	56495	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-.	1*	4	U157	X	1# (0.454)
Methylene bromide	74953	Methane, dibromo-	1*	4	U068	C	1000 (454)
Methylene chloride	75092	Methane, dichloro-	1*	2,4	U080	C	1000 (454)
Methylene oxide	50000	Formaldehyde	1000	1,4	U122	C	1000# (454)
Methyl ethyl ketone	78933	2-Butanone	1*	4	U159	D	5000 (2270)
Methyl ethyl ketone peroxide.	1338234	2-Butanone peroxide	1*	4	U160	A	10 (4.54)
Methyl hydrazine	60344	Hydrazine, methyl-	1*	4	P068	A	10 (4.54)
Methyl iodide	74884	Methane, iodo-	1*	4	U138	X	1# (0.454)
Methyl isobutyl ketone	108101	4-Methyl-2-pentanone	1*	4	U161	D	5000 (2270)
Methyl isocyanate	624839	Isocyanic acid, methyl ester	1*	4	P064	X	1## (0.454)
2-Methyllactonitrile	75865	Acetone cyanohydrin Propanenitrile, 2-hydroxy-2-methyl-	10	1,4	P069	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Methylmercaptan	74931	Methanethiol Thiomethanol	100	1,4	U153	B	100 (45.4)
Methyl methacrylate	80626	2-Propenoic acid, 2-methyl-, methyl ester.	5000	1,4	U162	C	1000 (454)
N-Methyl-N'-nitro-N-nitrosoguanidine.	70257	Guanidine, N-nitroso-N-methyl-N'-nitro-.	1*	4	U163	X	1# (0.454)
Methyl parathion	298000	O,O-Dimethyl O-p-nitrophenyl phosphorothioate.	100	1,4	P071	B	100 (45.4)
4-Methyl-2-pentanone	108101	Methyl isobutyl ketone	1*	4	U161	D	5000 (2270)
Methylthiouracil	56042	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-.	1*	4	U164	X	1# (0.454)
Mevinphos	7786347		1	1		A	10 (4.54)
Mexacarbate	315184		1000	1		C	1000 (454)
Mitomycin C	50077	Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione,6-amino-8-[((aminocarbonyl)oxy) methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy- 5-methyl-.	1*	4	U010	X	1# (0.454)
Monoethylamine	75047		1000	1		B	100 (45.4)
Monomethylamine	74895		1000	1		B	100 (45.4)
Naled	300765		10	1		A	10 (4.54)
5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[3-amino- 2,3,6-trideoxy-alpha-L- lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy- 1-methoxy-.	20830813	Daunomycin	1*	4	U059	X	1# (0.454)
Naphthalene	91203		5000	1,2,4	U165	B	100 (45.4)
Naphthalene, 2-chloro-	91587	beta-Chloronaphthalene 2-Chloronaphthalene	1*	2,4	U047	D	5000 (2270)
1,4-Naphthalenedione	130154	1,4-Naphthoquinone	1*	4	U166	D	5000 (2270)
2,7-Naphthalenedisulfonic acid,3,3'-[(3,3'-dimethyl- (1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt.	72571	Trypan blue	1*	4	U236	X	1# (0.454)
Naphthenic acid	1338245		100	1		B	100 (45.4)
1,4-Naphthoquinone	130154	1,4-Naphthalenedione	1*	4	U166	D	5000 (2270)
1-Naphthylamine	134327	alpha-Naphthylamine	1*	4	U167	X	1# (0.454)
2-Naphthylamine	91598	beta-Naphthylamine	1*	4	U168	X	1# (0.454)
alpha-Naphthylamine	134327	1-Naphthylamine	1*	4	U167	X	1# (0.454)
beta-Naphthylamine	91598	2-Naphthylamine	1*	4	U168	X	1# (0.454)
2-Naphthylamine, N,N-bis(2-chloroethyl)-.	494031	Chlornaphazine	1*	4	U026	X	1# (0.454)
alpha-Naphthylthiourea	86884	Thiourea, 1-naphthalenyl-.	1*	4	P072	B	100 (45.4)
Nickel ††	7440020		1*	2		X	1# (0.454)
NICKEL AND COMPOUNDS.			1*	2			**
Nickel ammonium sulfate.	15699180		5000	1		D	5000# (2270)
Nickel carbonyl	13463393	Nickel tetracarbonyl	1*	4	P073	X	1# (0.454)
Nickel chloride	7718549 37211055		5000	1		D	5000# (2270)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Nickel cyanide	557197	Nickel(II) cyanide	1*	4	P074	X	1# (0.454)
Nickel(II) cyanide	557197	Nickel cyanide	1*	4	P074	X	1# (0.454)
Nickel hydroxide	12054487		1000	1		C	1000# (454)
Nickel nitrate	14216752		5000	1		D	5000# (2270)
Nickel sulfate	7786814		5000	1		D	5000# (2270)
Nickel tetracarbonyl	13463393	Nickel carbonyl	1*	4	P073	X	1# (0.454)
Nicotine and salts	54115	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts.	1*	4	P075	B	100 (45.4)
Nitric acid	7697372		1000	1		C	1000 (454)
Nitric oxide	10102439	Nitrogen(II) oxide	1*	4	P076	A	10 (4.54)
p-Nitroaniline	100016	Benzenamine, 4-nitro-	1*	4	P077	D	5000 (2270)
Nitrobenzene	98953	Benzene, nitro-	1000	1,2,4	U169	C	1000 (454)
Nitrogen dioxide	10102440 10544726	Nitrogen(IV) oxide	1000	1,4	P078	A	10 (4.54)
Nitrogen(II) oxide	10102439	Nitric oxide	1*	4	P076	A	10 (4.54)
Nitrogen(IV) oxide	10102440 10544726	Nitrogen dioxide	1000	1,4	P078	A	10 (4.54)
Nitroglycerine	55630	1,2,3-Propanetriol, trinitrate-.	1*	4	P081	A	10 (4.54)
Nitrophenol (mixed)	25154556		1000	1		B	100 (45.4)
m-	554847						
o-	88755	2-Nitrophenol					
p-	100027	4-Nitrophenol Phenol, 4-nitro-					
p-Nitrophenol	100027	4-Nitrophenol Phenol, 4-nitro-	1000	1,2,4	U170	B	100 (45.4)
2-Nitrophenol	88755	o-Nitrophenol	1000	1,2		B	100 (45.4)
4-Nitrophenol	100027	p-Nitrophenol Phenol, 4-nitro-	1000	1,2,4	U170	B	100 (45.4)
NITROPHENOLS			1*	2			**
2-Nitropropane	79469	Propane, 2-nitro-	1*	4	U171	X	1# (0.454)
NITROSAMINES			1*	2			**
N-Nitrosodi-n-butylamine	924163	1-Butanamine, N-butyl-N-nitroso-.	1*	4	U172	X	1# (0.454)
N-Nitrosodiethanolamine	1116547	Ethanol, 2,2'-(nitrosoimino)bis-.	1*	4	U173	X	1# (0.454)
N-Nitrosodiethylamine	55185	Ethanamine, N-ethyl-N-nitroso-.	1*	4	U174	X	1# (0.454)
N-Nitrosodimethylamine	62759	Dimethylnitrosamine	1*	2,4	P082	X	1# (0.454)
N-Nitrosodiphenylamine	86306		1*	2		B	100 (45.4)
N-Nitrosodi-n-propylamine.	621647	Di-n-propylnitrosamine	1*	2,4	U111	X	1# (0.454)
N-Nitroso-N-ethylurea	759739	Carbamide, N-ethyl-N-nitroso-.	1*	4	U176	X	1# (0.454)
N-Nitroso-N-methylurea	684935	Carbamide, N-methyl-N-nitroso-.	1*	4	U177	X	1# (0.454)
N-Nitroso-N-methylurethane.	615532	Carbamic acid, methylnitroso-,ethyl ester.	1*	4	U178	X	1# (0.454)
N-Nitrosomethylvinylamine.	4549400	Ethenamine, N-methyl-N-nitroso-.	1*	4	P084	X	1# (0.454)
N-Nitrosopiperidine	100754	Pyridine, hexahydro-N-nitroso-.	1*	4	U179	X	1# (0.454)
N-Nitrosopyrrolidine	930552	Pyrrole, tetrahydro-N-nitroso-.	1*	4	U180	X	1# (0.454)
Nitrotoluene	1321126		1000	1		C	1000 (454)
m-	99081						
o-	88722						
p-	99990						
5-Nitro-o-toluidine	99558	Benzenamine, 2-methyl-5-nitro-.	1*	4	U181	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
5-Norbornene-2,3-dimethanol,1,4,5,6,7,7-hexachloro, cyclic sulfite.	115297	Endosulfan	1	1,2,4	P050	X	1 (0.454)
Octamethylpyrophosphoramide.	152169	Diphosphoramide, octamethyl-.	1*	4	P085	B	100 (45.4)
Osmium oxide	20816120	Osmium tetroxide	1*	4	P087	C	1000 (454)
Osmium tetroxide	20816120	Osmium oxide	1*	4	P087	C	1000 (454)
7-Oxabicyclo[2.2.1] heptane-2,3-dicarboxylic acid.	145733	Endothall	1*	4	P088	C	1000 (454)
1,2-Oxathiolane, 2,2-dioxide.	1120714	1,3-Propane sultone	1*	4	U193	X	1# (0.454)
2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino] tetrahydro-2-oxide.	50180	Cyclophosphamide	1*	4	U058	X	1# (0.454)
Oxirane	75218	Ethyleneoxide	1*	4	U115	X	1# (0.454)
Oxirane, 2-(chloromethyl)-.	106898	1-Chloro-2,3-epoxypropane. Epichlorohydrin	1000	1,4	U041	C	1000# (454)
Paraformaldehyde	30525894		1000	1		C	1000 (454)
Paraldehyde	123637	1,3,5-Trioxane, 2,4,6-trimethyl-.	1*	4	U182	C	1000 (454)
Parathion	56382	Phosphorothioic acid,O,O-diethyl O-(p-nitrophenyl) ester.	1	1,4	P089	X	1# (0.454)
Pentachlorobenzene	608935	Benzene, pentachloro-	1*	4	U183	A	10 (4.54)
Pentachloroethane	76017	Ethane, pentachloro-	1*	4	U184	X	1# (0.454)
Pentachloronitrobenzene	82688	Benzene, pentachloronitro-.	1*	4	U185	X	1# (0.454)
Pentachlorophenol	87865	Phenol, pentachloro-	10	1,2,4	U242	A	10# (4.54)
1,3-Pentadiene	504609	1-Methylbutadiene	1*	4	U186	B	100 (45.4)
Phenacetin	62442	Acetamide, N-(4-ethoxyphenyl)-.	1*	4	U187	X	1# (0.454)
Phenanthrene	85018		1*	2		D	5000 (2270)
Phenol	108952	Benzene, hydroxy-	1000	1,2,4	U188	C	1000 (454)
Phenol, 2-chloro-	95578	2-Chlorophenol o-Chlorophenol	1*	2,4	U048	B	100 (45.4)
Phenol, 4-chloro-3-methyl-.	59507	4-Chloro-m-cresol p-Chloro-m-cresol	1*	2,4	U039	D	5000 (2270)
Phenol, 2-cyclohexyl-4,6-dinitro-.	131895	4,6-Dinitro-o-cyclohexylphenol.	1*	4	P034	B	100 (45.4)
Phenol, 2,4-dichloro-	120832	2,4-Dichlorophenol	1*	2,4	U081	B	100 (45.4)
Phenol, 2,6-dichloro-	87650	2,6-Dichlorophenol	1*	4	U082	B	100 (45.4)
Phenol, 2,4-dimethyl-	105679	2,4-Dimethylphenol	1*	2,4	U101	B	100 (45.4)
Phenol, 2,4-dinitro-	51285	2,4-Dinitrophenol	1000	1,2,4	P048	A	10 (4.54)
Phenol, 2,4-dinitro-6-(1-methylpropyl)-.	88857	Dinoseb	1*	4	P020	C	1000 (454)
Phenol, 2,4-dinitro-6-methyl-, and salts.	534521	4,6-Dinitro-o-cresol and salts.	1*	2,4	P047	A	10 (4.54)
Phenol, 4-nitro-	100027	p-Nitrophenol 4-Nitrophenol	1000	1,2,4	U170	B	100 (45.4)
Phenol, pentachloro-	87865	Pentachlorophenol	10	1,2,4	U242	A	10# (4.54)
Phenol, 2,3,4,6-tetrachloro-.	58902	2,3,4,6-Tetrachlorophenol.	1*	4	U212	A	10 (4.54)
Phenol, 2,4,5-trichloro-	95954	2,4,5-Trichlorophenol	10	1,4	U230	A	10# (4.54)
Phenol, 2,4,6-trichloro-	88062	2,4,6-Trichlorophenol	10	1,2,4	U231	A	10# (4.54)
Phenol, 2,4,6-trinitro-, ammonium salt.	131748	Ammonium picrate	1*	4	P009	A	10 (4.54)
Phenyl dichloroarsine	696286	Dichlorophenylarsine	1*	4	P036	X	1# (0.454)
1,10-(1,2-Phenylene)pyrene.	193395	Indeno(1,2,3-cd)pyrene	1*	2,4	U137	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Phenylmercuric acetate	62384	Mercury, (acetato-O)phenyl-.	1*	4	P092	B	100 (45.4)
N-Phenylthiourea	103855	Thiourea, phenyl-	1*	4	P093	B	100 (45.4)
Phorate	298022	Phosphorodithioic acid, O,O-diethyl S-(ethylthio) methyl ester.	1*	4	P094	A	10 (4.54)
Phosgene	75445	Carbonyl chloride	5000	1,4	P095	A	10 (4.54)
Phosphine	7803512	Hydrogen phosphide	1*	4	P096	B	100 (45.4)
Phosphoric acid	7664382		5000	1		D	5000 (2270)
Phosphoric acid,diethyl p-nitrophenyl ester.	311455	Diethyl-p-nitrophenyl phosphate.	1*	4	P041	B	100 (45.4)
Phosphoric acid, lead salt.	7446277	Lead phosphate	1*	4	U145	X	1# (0.454)
Phosphorodithioic acid, O,O-diethyl S-methylester.	3288582	O,O-Diethyl S-methyl dithiophosphate.	1*	4	U087	D	5000 (2270)
Phosphorodithioic acid, O,O-diethyl S-(ethylthio) methyl ester.	298022	Phorate	1*	4	P094	A	10 (4.54)
Phosphorodithioic acid,O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester.	60515	Dimethoate	1*	4	P044	A	10 (4.54)
Phosphorofluoridic acid,bis(1-methylethyl) ester.	55914	Diisopropyl fluorophosphate.	1*	4	P043	B	100 (45.4)
Phosphorothioic acid,O,O-diethyl O-(p-nitrophenyl) ester.	56382	Parathion	1	1,4	P089	X	1# (0.454)
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.	297972	O,O-Diethyl O-pyrazinyl phosphorothioate.	1*	4	P040	B	100 (45.4)
Phosphorothioic acid, O,O-dimethyl O-[p-[(dimethylamino)-sulfonyl]phenyl] ester.	52857	Famphur	1*	4	P097	C	1000 (454)
Phosphorus	7723140		1	1		X	1 (0.454)
Phosphorus oxychloride	10025873		5000	1		C	1000 (454)
Phosphorus pentasulfide	1314803	Phosphorus sulfide Sulfur phosphide	100	1,4	U189	B	100 (45.4)
Phosphorus sulfide	1314803	Phosphorus pentasulfide Sulfur phosphide	100	1,4	U189	B	100 (45.4)
Phosphorus trichloride	7719122		5000	1		C	1000 (454)
PHTHALATE ESTERS			1*	2			**
Phthalic anhydride	85449	1,2-Benzenedicarboxylic acid anhydride.	1*	4	U190	D	5000 (2270)
2-Picoline	109068	Pyridine,2-methyl-	1*	4	U191	D	5000 (2270)
Plumbane, tetraethyl-	78002	Tetraethyl lead	100	1,4	P110	A	10# (4.54)
POLYCHLORINATED BIPHENYLS (PCBs).	1336363	Aroclors	10	1,2		A	10# (4.54)
	12674112	Aroclor 1016					
	11104282	Aroclor 1221					
	11141165	Aroclor 1232					
	53469219	Aroclor 1242					
	12672296	Aroclor 1248					
	11097691	Aroclor 1254					
	11096825	Aroclor 1260					
POLYNUCLEAR AROMATIC HYDROCARBONS.			1*	2			**
Potassium arsenate	7784410		1000	1		C	1000# (454)
Potassium arsenite	10124502		1000	1		C	1000# (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds (Kg)
Potassium bichromate	7778509		1000	1		C	1000# (454)
Potassium chromate	7789006		1000	1		C	1000# (454)
Potassium cyanide	151508		10	1,4	P098	A	10 (4.54)
Potassium hydroxide	1310583		1000	1		C	1000 (454)
Potassium permanganate.	7722647		100	1		B	100 (45.4)
Potassium silver cyanide	506616		1*	4	P099	X	1 (0.454)
Pronamide	23950585	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide.	1*	4	U192	D	5000 (2270)
1-Propanal, 2,3-epoxy-	765344	Glycidylaldehyde	1*	4	U126	X	1# (0.454)
Propanal, 2-methyl-2-(methylthio)-,O-[(methylamino) carbonyl]oxime.	116063	Aldicarb	1*	4	P070	X	1 (0.454)
1-Propanamine	107108	n-Propylamine	1*	4	U194	D	5000 (2270)
1-Propanamine, N-propyl-.	142847	Dipropylamine	1*	4	U110	D	5000 (2270)
Propane, 1,2-dibromo-3-chloro-.	96128	1,2-Dibromo-3-chloropropane.	1*	4	U066	X	1# (0.454)
Propane, 2-nitro-	79469	2-Nitropropane	1*	4	U171	X	1# (0.454)
Propane, 2,2'-oxybis(2-chloro-.	108601	Bis(2-chloroisopropyl) ether.	1*	2,4	U027	C	1000 (454)
1,3-Propane sultone	1120714	1,2-Oxathiolane, 2,2-dioxide.	1*	4	U193	X	1# (0.454)
Propanedinitrile	109773	Malononitrile	1*	4	U149	C	1000 (4.54)
Propanenitrile	107120	Ethyl cyanide	1*	4	P101	A	10 (4.54)
Propanenitrile, 3-chloro-	542767	3-Chloropropionitrile	1*	4	P027	C	1000 (454)
Propanenitrile, 2-hydroxy-2-methyl-.	75865	Acetone cyanohydrin 2-Methyllactonitrile	10	1,4	P069	A	10 (4.54)
1,2,3-Propanetriol, trinitrate-.	55630	Nitroglycerine	1*	4	P081	A	10 (4.54)
1-Propanol, 2,3-dibromo-, phosphate (3:1).	126727	Tris(2,3-dibromopropyl) phosphate.	1*	4	U235	X	1# (0.454)
1-Propanol, 2-methyl-	78831	Isobutyl alcohol	1*	4	U140	D	5000 (2270)
2-Propanone	67641	Acetone	1*	4	U002	D	5000 (2270)
2-Propanone, 1-bromo-	598312	Bromoacetone	1*	4	P017	C	1000 (454)
Propargite	2312358		10	1		A	10 (4.54)
Propargyl alcohol	107197	2-Propyn-1-ol	1*	4	P102	C	1000 (454)
2-Propenal	107028	Acrolein	1	1,2,4	P003	X	1 (0.454)
2-Propenamide	79061	Acrylamide	1*	4	U007	D	5000 (2270)
Propene, 1,3-dichloro-	542756	1,3-Dichloropropene	5000	1,2,4	U084	B	100# (45.4)
1-Propene, 1,1,2,3,3,3-hexachloro-.	1888717	Hexachloropropene	1*	4	U243	C	1000 (454)
2-Propenenitrile	107131	Acrylonitrile	100	1,2,4	U009	B	100# (45.4)
2-Propenenitrile, 2-methyl-.	126987	Methacrylonitrile	1*	4	U152	C	1000 (454)
2-Propenoic acid	79107	Acrylic acid	1*	4	U008	D	5000 (2270)
2-Propenoic acid, ethyl ester.	140885	Ethyl acrylate	1*	4	U113	C	1000 (454)
2-Propenoic acid, 2-methyl-, ethyl ester.	97632	Ethyl methacrylate	1*	4	U118	C	1000 (454)
2-Propenoic acid, 2-methyl-, methyl ester.	80626	Methyl methacrylate	5000	1,4	U162	C	1000 (454)
2-Propen-1-ol	107186	Allyl alcohol	100	1,4	P005	B	100 (45.4)
Propionic acid	79094		5000	1		D	5000 (2270)
Propionic acid, 2-(2,4,5-trichlorophenoxy)-.	93721	Silvex 2,4,5-TP acid	100	1,4	U233	B	100 (45.4)
Propionic anhydride	123626		5000	1		D	5000 (2270)
n-Propylamine	107108	1-Propanamine	1*	4	U194	D	5000 (2270)
Propylene dichloride	78875	1,2-Dichloropropane	5000	1,2,4	U083	C	1000 (454)
Propylene oxide	75569		5000	1		B	100 (45.4)
1,2-Propylenimine	75558	2-Methylaziridine	1*	4	P067	X	1# (0.454)
2-Propyn-1-ol	107197	Propargyl alcohol	1*	4	P102	C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Pyrene	129000		1*	2		D	5000 (2270)
Pyrethrins	121299 121211 8003347		1000	1		X	1 (0.454)
4-Pyridinamine	504245	4-Aminopyridine	1*	4	P008	C	1000 (454)
Pyridine	110861		1*	4	U196	C	1000 (454)
Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylamino]-.	91805	Methapyrilene	1*	4	U155	D	5000 (2270)
Pyridine, hexahydro-N-nitroso-.	100754	N-Nitrosopiperidine	1*	4	U179	X	1# (0.454)
Pyridine,2-methyl-	109068	2-Picoline	1*	4	U191	D	5000 (2270)
Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts.	54115	Nicotine and salts	1*	4	P075	B	100 (45.4)
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-.	56042	Methylthiouracil	1*	4	U164	X	1# (0.454)
Pyrophosphoric acid, tetraethyl ester.	107493	Tetraethyl pyrophosphate.	100	1,4	P111	A	10 (4.54)
Pyrrole, tetrahydro-N-nitroso-.	930552	N-Nitrosopyrrolidine	1*	4	U180	X	1 (0.454)
Quinoline	91225		1000	1		D	5000 (2270)
RADIONUCLIDES			1*	3		X	§
Reserpine	50555	Yohimban-16-carboxylic acid,11,17-dimethoxy-18- [(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester.	1*	4	U200	D	5000 (2270)
Resorcinol	108463	1,3-Benzenediol	1000	1,4	U201	D	5000 (2270)
Saccharin and salts	81072	1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts.	1*	4	U202	X	1# (0.454)
Safrole	94597	Benzene, 1,2-methylenedioxy-4-allyl-.	1*	4	U203	X	1# (0.454)
Selenious acid	7783008		1*	4	U204	A	10 (4.54)
Selenium ††	7782492		1*	2		B	100 (45.4)
SELENIUM AND COMPOUNDS.			1*	2			**
Selenium dioxide	7446084	Selenium oxide	1000	1,4	U204	A	10 (4.54)
Selenium disulfide	7488564	Sulfur selenide	1*	4	U205	X	1# (0.454)
Selenium oxide	7446084	Selenium dioxide	1000	1,4	U204	A	10 (4.54)
Selenourea	630104	Carbamimidoselenoic acid.	1*	4	P103	C	1000 (454)
L-Serine, diazoacetate (ester).	115026	Azaserine	1*	4	U015	X	1# (0.454)
Silver ††	7440224		1*	2		C	1000 (454)
SILVER AND COMPOUNDS.			1*	2			**
Silver cyanide	506649		1*	4	P104	X	1 (0.454)
Silver nitrate	7761888		1	1		X	1 (0.454)
Silvex	93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)-. 2,4,5-TP acid	100	1,4	U233	B	100 (45.4)
Sodium	7440235		1000	1		A	10 (4.54)
Sodium arsenate	7631892		1000	1		C	1000# (454)
Sodium arsenite	7784465		1000	1		C	1000# (454)
Sodium azide	26628228		1*	4	P105	C	1000 (454)
Sodium bichromate	10588019		1000	1		C	1000# (454)
Sodium bifluoride	1333831		5000	1		B	100 (45.4)
Sodium bisulfite	7631905		5000	1		D	5000 (2270)
Sodium chromate	7775113		1000	1		C	1000# (454)
Sodium cyanide	143339		10	1,4	P106	A	10 (4.54)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Sodium dodecylbenzene sulfonate.	25155300		1000	1		C	1000 (454)
Sodium fluoride	7681494		5000	1		C	1000 (454)
Sodium hydrosulfide	16721805		5000	1		D	5000 (2270)
Sodium hydroxide	1310732		1000	1		C	1000 (454)
Sodium hypochlorite	7681529 10022705		100	1		B	100 (45.4)
Sodium methylate	124414		1000	1		C	1000 (454)
Sodium nitrite	7632000		100	1		B	100 (45.4)
Sodium phosphate, dibasic.	7558794 10039324 10140655		5000	1		D	5000 (2270)
Sodium phosphate, tribasic.	7601549 7785844 10101890 10361894 7758294 10124568		5000	1		D	5000 (2270)
Sodium selenite	10102188 7782823		1000	1		B	100 (45.4)
4,4'-Stilbenediol, alpha,alpha'-diethyl-.	56531	Diethylstilbestrol	1*	4	U089	X	1# (0.454)
Streptozotocin	18883664	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-.	1*	4	U206	X	1# (0.454)
Strontium chromate	7789062		1000	1		C	1000# (454)
Strychnidin-10-one, and salts.	57249	Strychnine and salts	10	1,4	P108	A	10 (4.54)
Strychnidin-10-one, 2,3-dimethoxy-.	357573	Brucine	1*	4	P018	B	100 (4.54)
Strychnine and salts	57249	Strychnidin-10-one, and salts.	10	1,4	P108	A	10 (4.54)
Styrene	100425		1000	1		C	1000 (454)
Sulfur hydride	7783064	Hydrogen sulfide Hydrosulfuric acid	100	1,4	U135	B	100 (45.4)
Sulfur monochloride	12771083		1000	1		C	1000 (454)
Sulfur phosphide	1314803	Phosphorus pentasulfide Phosphorus sulfide	100	1,4	U189	B	100 (45.4)
Sulfur selenide	7488564	Selenium disulfide	1*	4	U205	X	1# (0.454)
Sulfuric acid	7664939 8014957		1000	1		C	1000 (454)
Sulfuric acid, dimethyl ester.	77781	Dimethyl sulfate	1*	4	U103	X	1# (0.454)
Sulfuric acid, thallium(I) salt.	7446186 10031591	Thallium(I) sulfate	1000	1,4	P115	B	100 (45.4)
2,4,5-T	93765	2,4,5-T acid 2,4,5-Trichlorophenoxyacetic acid	100	1,4	U232	C	1000 (454)
2,4,5-T acid	93765	2,4,5-T 2,4,5-Trichlorophenoxyacetic acid	100	1,4	U232	C	1000 (454)
2,4,5-T amines	2008460 6369966 6369977 1319728 3813147		100	1		D	5000 (2270)
2,4,5-T esters	93798 2545597 61792072 1928478 25168154		100	1		C	1000 (454)
2,4,5-T salts	13560991		100	1		C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
TDE	72548	DDD 4,4' DDD Dichlorodiphenyl dichloroethane	1	1,2,4	U060	X	1# (0.454)
1,2,4,5-Tetrachlorobenzene.	95943	Benzene, 1,2,4,5-tetrachloro-.	1*	4	U207	D	5000 (2270)
2,3,7,8-Tetrachlorodibenzo-p-dioxin(TCDD).	1746016		1*	2		X	1# (0.454)
1,1,1,2-Tetrachloroethane.	630206	Ethane,1,1,1,2-tetrachloro-.	1*	4	U208	X	1# (0.454)
1,1,2,2-Tetrachloroethane.	79345	Ethane, 1,1,2,2-tetrachloro-.	1*	2,4	U209	X	1# (0.454)
Tetrachloroethylene	127184	Ethene, 1,1,2,2-tetrachloro-.	1*	2,4	U210	X	1# (0.454)
2,3,4,6-Tetrachlorophenol.	58902	Phenol, 2,3,4,6-tetrachloro-.	1*	4	U212	A	10 (4.54)
Tetraethyldithiopyrophosphate.	3689245	Dithiopyrophosphoric acid,tetraethyl ester.	1*	4	P109	B	100 (45.4)
Tetraethyl lead	78002	Plumbane, tetraethyl-	100	1,4	P110	A	10# (4.54)
Tetraethyl pyrophosphate.	107493	Pyrophosphoric acid, tetraethyl ester.	100	1,4	P111	A	10 (4.54)
Tetrahydrofuran	109999	Furan, tetrahydro-	1*	4	U213	C	1000 (454)
Tetranitromethane	509148	Methane, tetranitro-	1*	4	P112	A	10 (4.54)
Tetraphosphoric acid, hexaethyl ester.	757584	Hexaethyl tetraphosphate.	1*	4	P062	B	100 (45.4)
Thallic oxide	1314325	Thallium(III) oxide	1*	4	P113	B	100 (45.4)
Thallium ††	7440280		1*	2		C	1000 (454)
THALLIUM AND COMPOUNDS.			1*	2			**
Thallium(I) acetate	563688	Acetic acid, thallium(I) salt.	1*	4	U214	B	100 (45.4)
Thallium(I) carbonate	6533739	Carbonic acid, dithallium(I) salt.	1*	4	U215	B	100 (45.4)
Thallium(I) chloride	7791120		1*	4	U216	B	100 (45.4)
Thallium(I) nitrate	10102451		1*	4	U217	B	100 (45.4)
Thallium(III) oxide	1314325	Thallic oxide	1*	4	P113	B	100 (45.4)
Thallium(I) selenide	12039520		1*	4	P114	C	1000 (454)
Thallium(I) sulfate	7446186 10031591	Sulfuric acid, thallium(I) salt.	1000	1,4	P115	B	100 (45.4)
Thioacetamide	62555	Ethanethioamide	1*	4	U218	X	1# (0.454)
Thiofanox	39196184	3,3-Dimethyl-1-(methylthio)-2-butanone,O-[(methylamino) carbonyl] oxime.	1*	4	P045	B	100 (45.4)
Thioimidodicarbonic diamide.	541537	2,4-Dithiobiuret	1*	4	P049	B	100 (45.4)
Thiomethanol	74931	Methanethiol Methylmercaptan	100	1,4	U153	B	100 (45.4)
Thiophenol	108985	Benzenethiol	1*	4	P014	B	100 (45.4)
Thiosemicarbazide	79196	Hydrazinecarbothioamide	1*	4	P116	B	100 (45.4)
Thiourea	62566	Carbamide, thio-	1*	4	U219	X	1# (0.454)
Thiourea, (2-chlorophenyl)-.	5344821	1-(o-Chlorophenyl)thiourea.	1*	4	P026	B	100 (45.4)
Thiourea, 1-naphthalenyl-.	86884	alpha-Naphthylthiourea	1*	4	P072	B	100 (45.4)
Thiourea, phenyl-	103855	N-Phenylthiourea	1*	4	P093	B	100 (45.4)
Thiram	137268	Bis (dimethylthiocarbamoyl) disulfide.	1*	4	U244	A	10 (4.54)
Toluene	108883	Benzene, methyl-	1000	1,2,4	U220	C	000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Toluenediamine	95807	Diaminotoluene	1*	4	U221	X	1# (0.454)
	25376458						
	496720						
	823405						
Toluene diisocyanate	584849	Benzene, 2,4-diisocyanatomethyl-.	1*	4	U223	B	100 (45.4)
	91087						
	26471625						
o-Toluidine	95534	2-Amino-1-methyl benzene.	1*	4	U328	X	1# (0.454)
p-Toluidine	106490	4-Amino-1-methyl benzene.	1*	4	U353	X	1# (0.454)
o-Toluidine hydrochloride.	636215	Benzenamine, 2-methyl-, hydrochloride.	1*	4	U222	X	1# (0.454)
Toxaphene	8001352	Camphene, octachloro-	1	1,2,4	P123	X	1# (0.454)
2,4,5-TP acid	93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)-.	100	1,4	U233	B	100 (45.4)
		Silvex					
2,4,5-TP acid esters	32534955		100	1		B	100 (45.4)
1H-1,2,4-Triazol-3-amine	61825	Amitrole	1*	4	U011	X	1# (0.454)
Trichlorfon	52686		1000	1		B	100 (45.4)
1,2,4-Trichlorobenzene	120821		1*	2		B	100 (45.4)
1,1,1-Trichloroethane	71556	Methyl chloroform	1*	2,4	U226	C	1000 (454)
1,1,2-Trichloroethane	79005	Ethane, 1,1,2-trichloro-	1*	2,4	U227	X	1# (0.454)
Trichloroethene	79016	Trichloroethylene	1000	1,2,4	U228	C	1000# (454)
Trichloroethylene	79016	Trichloroethene	1000	1,2,4	U228	C	1000# (454)
Trichloromethanesulfenyl chloride.	594423	Methanesulfenyl chloride, trichloro-.	1*	4	P118	B	100 (45.4)
Trichloromonofluoromethane.	75694	Methane, trichlorofluoro-	1*	4	U121	D	5000 (2270)
Trichlorophenol	25167822		10	1		A	10# (4.54)
2,3,4-Trichlorophenol	15950660						
2,3,5-Trichlorophenol	933788						
2,3,6-Trichlorophenol	933755						
2,4,5-Trichlorophenol	95954	Phenol, 2,4,5-trichloro-					
2,4,6-Trichlorophenol	88062	Phenol, 2,4,6-trichloro-					
3,4,5-Trichlorophenol	609198						
2,4,5-Trichlorophenol	95954	Phenol, 2,4,5-trichloro-	10	1,4	U230	A	10# (4.54)
2,4,6-Trichlorophenol	88062	Phenol, 2,4,6-trichloro-	10	1,2,4	U231	A	10# (4.54)
2,4,5-Trichlorophenoxyacetic acid.	93765	2,4,5-T	100	1,4	U232	C	1000 (454)
		2,4,5-T acid					
Triethanolamine dodecylbenzenesulfonate.	27323417		1000	1		C	1000 (454)
Triethylamine	121448		5000	1		D	5000 (2270)
Trimethylamine	75503		1000	1		B	100 (45.4)
sym-Trinitrobenzene	99354	Benzene, 1,3 [illegible] trinitro-	1*	4	U234	A	10 (4.54)
1,3,5-Trioxane, 2,4,6-trimethyl-.	123637	Paraldehyde	1*	4	U182	C	1000 (454)
Tris(2,3-dibromopropyl) phosphate.	126727	1-Propanol, 2,3-dibromo-, phosphate (3:1).	1*	4	U235	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
Trypan blue	72571	2,7-Naphthalenedisulfonic acid,3,3'-[(3,3'-dimethyl- (l,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4- hydroxy)-tetrasodium, salt.	1*	4	U236	X	1# (0.454)
Unlisted Hazardous Wastes Characteristic of EP Toxicity.	N.A.						
Characteristic of Ignitability.			1*	4	D001	B	100 (45.4)
Characteristic of Corrosivity.			1*	4	D002	B	100 (45.4)
Characteristic of Reactivity.			1*	4	D003	B	100 (45.4)
Characteristic of EP Toxicity.			1*	4			
Arsenic			1*	4	D004	X	1# (0.454)
Barium			1*	4	D005	C	1000 (454)
Cadmium			1*	4	D006	X	1# (0.454)
Chromium			1*	4	D007	X	1# (0.454)
Lead			1*	4	D008	X	1## (0.454)
Mercury			1*	4	D009	X	1 (0.454)
Selenium D010	N.A.		1*	4	D010	A	10 (4.54)
Silver			1*	4	D011	X	1 (0.454)
Endrin			1	1,4	D012	X	1 (0.454)
Lindane			1	1,4	D013	X	1# (0.454)
Methoxychlor			1	1,4	D014	X	1 (0.454)
Toxaphene			1	1,4	D015	X	1# (0.454)
2,4-D			100	1,4	D016	B	100 (45.4)
2,4,5-TP			100	1,4	D017	B	100 (45.4)
Uracil, 5-[bis(2-chloroethyl)amino]-.	66751	Uracil mustard	1*	4	U237	X	1# (0.454)
Uracil mustard	66751	Uracil, 5-[bis(2-chloroethyl)amino]-.	1*	4	U237	X	1# (0.454)
Uranyl acetate ****	541093		5000	1		B	100 (45.4)
Uranyl nitrate ****	10102064		5000	1		B	100 (45.4)
Vanadic acid, ammonium salt.	7803556	Ammonium vanadate	1*	4	P119	C	1000 (454)
Vanadium(V) oxide	1314621	Vanadium pentoxide	1000	1,4	P120	C	1000 (454)
Vanadium pentoxide	1314621	Vanadium(V) oxide	1000	1,4	P120	C	1000 (454)
Vanadyl sulfate	27774136		1000	1		C	1000 (454)
Vinyl acetate	108054		1000	1		D	5000 (2270)
Vinyl chloride	75014	Ethene, chloro-	1*	2,3,4	U043	X	1# (0.454)
Vinylidene chloride	75354	1,1-Dichloroethylene Ethene, 1,1-dichloro-	5000	1,2,4	U078	D	5000# (2270)
Warfarin	81812	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts.	1*	4	P001	B	100 (45.4)
Xylene (mixed)	1330207	Benzene,dimethyl	1000	1,4	U239	C	1000 (454)
m-	108383	m-					
o-	95476	o-					
p-	106423	p-					
Xylenol	1300716		1000	1		C	1000 (454)
Yohimban-16-carboxylic acid,11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methylester.	50555	Reserpine	1*	4	U200	D	5000 (2270)
Zinc ††	7440666		1*	2		C	1000 (454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
ZINC AND COMPOUNDS.			1*	2			**
Zinc acetate	557346		1000	1		C	1000 (454)
Zinc ammonium chloride	52628258		5000	1		C	1000 (454)
Zinc borate	1332076		1000	1		C	1000 (454)
Zinc bromide	7699458		5000	1		C	1000 (454)
Zinc carbonate	3486359		1000	1		C	1000 (454)
Zinc chloride	7646857		5000	1		C	1000 (454)
Zinc cyanide	557211		10	1,4	P121	A	10 (4.54)
Zinc fluoride	7783495		1000	1		C	1000 (454)
Zinc formate	557415		1000	1		C	1000 (454)
Zinc hydrosulfite	7779864		1000	1		C	1000 (454)
Zinc nitrate	7779886		5000	1		C	1000 (454)
Zinc phenolsulfonate	127822		5000	1		D	5000 (2270)
Zinc phosphide	1314847		1000	1,4	P122	B	100 (45.4)
Zinc silicofluoride	16871719		5000	1		D	5000 (2270)
Zinc sulfate	7733020		1000	1		C	1000 (454)
Zirconium nitrate	13746899		5000	1		D	5000 (2270)
Zirconium potassium fluoride.	16923958		5000	1		C	1000 (454)
Zirconium sulfate	14644612		5000	1		D	5000 (2270)
Zirconium tetrachloride	10026116		5000	1		D	5000 (2270)
F001			1*	4	F001	X	1# (0.454)
The following spent halogenated solvents used in degreasing and sludges from the recovery of these solvents in degreasing operations:							
(a) Tetrachloroethylene.	127184					X	1# (0.454)
(b) Trichloroethylene	79016					C	1000# (454)
(c) Methylene chloride.	75092					C	1000 (454)
(d) 1,1,1-Trichloroethane.	71556					C	1000 (454)
(e) Carbon tetrachloride.	56235					D	5000# (2270)
(f) Chlorinated fluorocarbons.	(N.A.)					D	5000 (2270)
F002			1*	4	F002	X	1# (0.454)
The following spent halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Tetrachloroethylene.	127184					X	1# (0.454)
(b) Methylene Chloride.	75092					C	1000 (454)
(c) Trichloroethylene	79016					C	1000# (454)
(d) 1,1,1-Trichloroethane.	71556					C	1000 (454)
(e) Chlorobenzene	108907					B	100 (45.4)
(f) 1,1,2-Trichloro-1,2,2-trifluoroethane.	76131					D	5000 (2270)
(g) o-Dichlorobenzene.	106467					B	100 (45.4)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
(h) Trichlorofluoromethane.	75694					D	5000 (2270)
F003 The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:			1*	4	F003	B	100 (45.4)
(a) Xylene	1330207					C	1000 (454)
(b) Acetone	67641					D	5000 (2270)
(c) Ethyl acetate	141786					D	5000 (2270)
(d) Ethylbenzene	100414					C	1000 (454)
(e) Ethyl ether	60297					B	100 (45.4)
(f) Methyl isobutyl ketone.	108101					D	5000 (2270)
(g) n-Butyl alcohol	71363					D	5000 (2270)
(h) Cyclohexanone	108941					D	5000 (2270)
(i) Methanol	67561					D	5000 (2270)
F004 The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents: (a) Cresols/Cresylic acid (b) Nitrobenzene			1*	4	F004	C	1000# (454)
F005 The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents: (a) Toluene (b) Methyl ethyl ketone (c) Carbon disulfide (d) Isobutanol (e) Pyridine			1*	4	F005	B	100 (45.4)
F006 Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel;			1*	4	F006	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
(5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum							
F007			1*	4	F007	A	10 (4.54)
Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions)							
F008			1*	4	F008	A	10 (4.54)
Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges)							
F009			1*	4	F009	A	10 (4.54)
Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions)							
F010			1*	4	F010	A	10 (4.54)
Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat-treating quenching bath sludges)							

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
F011 **Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot**			1*	4	F011	A	10 (4.54)
F012 **Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater teatment sludges)**			1*	4	F012	A	10 (4.54)
F019 **Wastewater treatment sludges from the chemical conversion coating of aluminum**			1*	4	F019	X	1# (0.454)
F020 **Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol.)**			1*	4	F020	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
F021 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.			1*	4	F021	X	1# (0.454)
F022 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions.			1*	4	F022	X	1# (0.454)
F023 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol.)			1*	4	F023	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
F024			1*	4	F024	X	1# (0.454)
Wastes, including but not limited to distillation residues, heavy ends, tars, and reactor cleanout wastes, from the production of chlorinated aliphatic hydrocarbons,having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters and filter aids, spent dessicants(sic), wastewater, wastewater treatment sludges, spent catalysts,and wastes listed in § 261.32.)							
F026			1*	4	F026	X	1# (0.454)
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions.							

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
F027 Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)			1*	4	F027	X	1# (0.454)
F028 Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.			1*	4	F028	X	1# (0.454)
K001 Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol			1*	4	K001	X	1# (0.454)
K002 Wastewater treatment sludge from the production of chrome yellow and orange pigments			1*	4	K002	X	1# (0.454)
K003 Wastewater treatment sludge from the production of molybdate orange pigments			1*	4	K003	X	1# (0.454)
K004 Wastewater treatment sludge from the production of zinc yellow pigments			1*	4	K004	X	1# (0.454)
K005 Wastewater treatment sludge from the production of chrome green pigments			1*	4	K005	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K006 **Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated)**			1*	4	K006	X	1# (0.454)
K007 **Wastewater treatment sludge from the production of iron blue pigments**			1*	4	K007	X	1# (0.454)
K008 Oven residue from the production of chrome oxide green pigments			1*	4	K008	X	1# (0.454)
K009 Distillation bottoms from the production of acetaldehyde from ethylene			1*	4	K009	X	1# (0.454)
K010 Distillation side cuts from the production of acetaldehyde from ethylene			1*	4	K010	X	1# (0.454)
K011 Bottom stream from the wastewater stripper in the production of acrylonitrile			1*	4	K011	X	1# (0.454)
K013 Bottom stream from the acetonitrile column in the production of acrylonitrile			1*	4	K013	X	1# (0.454)
K014 Bottoms from the acetonitrile purification column in the production of acrylonitrile			1*	4	K014	D	5000 (2270)
K015 Still bottoms from thedistillation of benzyl chloride			1*	4	K015	X	1# (0.454)
K016 Heavy ends or distillation residues from the productionof carbon tetrachloride			1*	4	K016	X	1# (0.454)
K017 Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin			1*	4	K017	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K018 Heavy ends from the fractionation column in ethyl chloride production			1*	4	K018	X	1# (0.454)
K019 Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production			1*	4	K019	X	1# (0.454)
K020 Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production			1*	4	K020	X	1# (0.454)
K021 Aqueous spent antimony catalyst waste from fluoromethanes production			1*	4	K021	X	1# (0.454)
K022 Distillation bottom tars from the production of phenol/acetone from cumene			1*	4	K022	X	1# (0.454)
K023 Distillation light ends from the production of phthalic anhydride from naphthalene			1*	4	K023	D	5000 (2270)
K024 Distillation bottoms from the production of phthalic anhydride from naphthalene			1*	4	K024	D	5000 (2270)
K025 Distillation bottoms from the production of nitrobenzene by the nitration of benzene			1*	4	K025	X	1# (0.454)
K026 Stripping still tails from the production of methyl ethyl pyridines			1*	4	K026	C	1000 (454)
K027 Centrifuge and distillation residues from toluene diisocyanate production			1*	4	K027	X	1# (0.454)
K028 Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane			1*	4	K028	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K029 Waste from the product steam stripper in the production of 1,1,1-trichloroethane			1*	4	K029	X	1# (0.454)
K030 Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene			1*	4	K030	X	1# (0.454)
K031 By-product salts generated in the production of MSMA and cacodylic acid			1*	4	K031	X	1# (0.454)
K032 Wastewater treatment sludge from the production of chlordane			1*	4	K032	X	1# (0.454)
K033 Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane			1*	4	K033	X	1# (0.454)
K034 Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane			1*	4	K034	X	1# (0.454)
K035 Wastewater treatment sludges generated in the production of creosote			1*	4	K035	X	1# (0.454)
K036 Still bottoms from toluene reclamation distillation in the production of disulfoton			1*	4	K036	X	1 (0.454)
K037 Wastewater treatment sludges from the production of disulfoton			1*	4	K037	X	1 (0.454)
K038 Wastewater from the washing and stripping of phorate production			1*	4	K038	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K039 Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate			1*	4	K039	A	10 (4.54)
K040 Wastewater treatment sludge from the production of phorate			1*	4	K040	X	1# (0.454)
K041 Wastewater treatment sludge from the production of toxaphene			1*	4	K041	X	1# (0.454)
K042 Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T			1*	4	K042	X	1# (0.454)
K043 2,6-Dichlorophenol waste from the production of 2,4-D			1*	4	K043	X	1# (0.454)
K044 Wastewater treatment sludges from the manufacturing and processing of explosives			1*	4	K044	A	10 (4.54)
K045 Spent carbon from the treatment of wastewater containing explosives			1*	4	K045	A	10 (4.54)
K046 Wastewater treatment sludges from the manufacturing , formulation and loading of lead-based initiating compounds			1*	4	K046	B	100 (45.4)
K047 Pink/red water from TNT operations			1*	4	K047	A	10 (4.54)
K048 Dissolved air flotation (DAF) float from the petroleum refining industry			1*	4	K048	X	1# (0.454)
K049 Slop oil emulsion solids from the petroleum refining industry			1*	4	K049	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K050 Heat exchanger bundle cleaning sludge from the petroleum refining industry			1*	4	K050	X	1# (0.454)
K051 API separator sludge from the petroleum refining industry			1*	4	K051	X	1# (0.454)
K052 Tank bottoms (leaded) from the petroleum refining industry			1*	4	K052	A	10# (4.54)
K060 Ammonia still lime sludge from coking operations			1*	4	K060	X	1# (0.454)
K061 Emission control dust/sludge from the primary production of steel in electric furnaces			1*	4	K061	X	1# (0.454)
K062 Spent pickle liquor from steel finishing operations			1*	4	K062	X	1# (0.454)
K064 Acid plant blowdown slurry/sludge resulting from thickening of blowdown slurry from primary copper production			1*	4	K064	X	1# (0.454)
K065 Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities			1*	4	K065	X	1# (0.454)
K066 Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production			1*	4	K066	X	1# (0.454)
K069 Emission control dust/sludge from secondary lead smelting			1*	4	K069	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K071 Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used			1*	4	K071	X	1 (0.454)
K073 Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production			1*	4	K073	X	1# (0.454)
K083 Distillation bottoms from aniline extraction			1*	4	K083	B	100 (45.4)
K084 Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds			1*	4	K084	X	1# (0.454)
K085 Distillation or fractionation column bottoms from the production of chlorobenzenes			1*	4	K085	X	1# (0.454)
K086 Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead			1*	4	K086	X	1# (0.454)
K087 Decanter tank tar sludge from coking operations			1*	4	K087	B	100 (45.4)
K088 Spent potliners from primary aluminum reduction			1*	4	K088	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K090 Emission control dust or sludge from ferrochromiumsilicon production			1*	4	K090	X	1# (0.454)
K091 Emission control dust or sludge from ferrochromium production			1*	4	K091	X	1# (0.454)
K093 Distillation light ends from the production of phthalic anhydride from ortho-xylene			1*	4	K093	D	5000 (2270)
K094 Distillation bottoms from the production of phthalic anhydride from ortho-xylene			1*	4	K094	D	5000 (2270)
K095 Distillation bottoms from the production of 1,1,1-trichloroethane			1*	4	K095	X	1# (0.454)
K096 Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane			1*	4	K096	X	1# (0.454)
K097 Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane			1*	4	K097	X	1# (0.454)
K098 Untreated process wastewater from the production of toxaphene			1*	4	K098	X	1# (0.454)
K099 Untreated wastewater from the production of 2,4-D			1*	4	K099	X	1# (0.454)
K100 Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting (Components of this waste are identical with those of K069).			1*	4	K100	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K101 Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds			1*	4	K101	X	1# (0.454)
K102 Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds			1*	4	K102	X	1# (0.454)
K103 Process residues from aniline extraction from the production of aniline			1*	4	K103	B	100 (45.4)
K104 Combined wastewater streams generated from nitrobenzene/aniline chlorobenzenes			1*	4	K104	X	1# (0.454)
K105 Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes			1*	4	K105	X	1# (0.454)
K106 Wastewater treatment sludge from the mercury cell process in chlorine production			1*	4	K106	X	1 (0.454)
K111 Product washwaters from the production of dinitrotoluene via nitration of toluene.			1*	4	K111	X	1# (0.454)
K112 Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.			1*	4	K112	X	1# (0.454)

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

[See footnotes at end of Table 302.4]

Hazardous Substance	CASRN	Regulatory Synonyms	Statutory			Final RQ	
			RQ	Code†	RCRA Waste Number	Category	Pounds(Kg)
K113 Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.			1*	4	K113	X	1# (0.454)
K114 Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.			1*	4	K114	X	1# (0.454)
K115 Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.			1*	4	K115	X	1# (0.454)
K116 Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.			1*	4	K116	X	1# (0.454)
K117 Wastewater from the reaction vent gas scrubber in the production of ethylene bromide via bromination of ethene.			1*	4	K117	X	1# (0.454)
K118 Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide.			1*	4	K118	X	1# (0.454)
K136 Still bottoms from the purification of ethylene dibromide in the production of ethylcne dibromide via bromination of ethene.			1*	4	K136	X	1# (0.454) Indicates the statutory source as defined by 1, 2, 3, or 4 below

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- no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 100 micrometers (0.004 inches) - the RQ for asbestos is limited to friable forms only

- The Agency may adjust the RQ for methyl isocyanate in a future rulemaking; until then the statutory RQ applies.

1 - indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 311(b)(4)

2 - indicates that the statutory source for designation of this hazardous substance under CERCLA is CWA Section 307(a)

3 - indicates that the statutory source for designation of this hazardous substance under CERCLA is CAA Section 112

4 - indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA Section 3001

1* - indicates that the 1-pound RQ is a CERCLA statutory RQ

** - indicates that no RQ is being assigned to the generic or broad class.

*** - Iron dextran was designated as a hazardous substance under CERCLA solely because of its listing as a hazardous waste under Section 3001 of RCRA. The Agency recently proposed to delist iron dextran under RCRA(50 FR 46468-46470, November 8,1985). The Agency has also proposed to delist iron dextran from Table 302.4 of 40 CFR 302.4 and thereby remove its designation as a CERCLA hazardous substance.

**** - Uranyl acetate and uranyl nitrate currently are being evaluated for their radioactive properties. Their RQs may be further adjusted in a future rulemaking adjusting the RQ of radionuclides.

- indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or chronic toxicity is completed § - the adjusted RQs for radionuclides may be found in Appendix B to this table.

[50 FR 13474, Apr. 4, 1985, as amended at 53 FR 35421, Sept. 13, 1988; 53 FR 43881, 43884, Oct. 31, 1988; 54 FR 22538, May 24, 1989]

EFFECTIVE DATE NOTE: At 54 FR 22538, May 24, 1989, § 302.4, Table 302.4 was amended by revising the entry for "Radionuclides" under the "Final RQ" column for "Pounds(Kg)" to read "§" and by revising the footnote at the end of the table explaining "§". For the convenience of the reader, the material in effect until July 24, 1989 follows:

§ 302.4 Designation of hazardous substances.

* * * * *

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

* * * * *

Hazardous Substance	Final RQ Pounds (Kg)
RADIONUCLIDES	1 § (0.454)

* * * * *

§ - The Agency may adjust the RQ for radionuclides in a future rulemaking; until then the statutory RQ applies.

APPENDIX A TO § 302.4—SEQUENTIAL CAS REGISTRY NUMBER LIST OF CERCLA HAZARDOUS SUBSTANCES

CASRN	Hazardous Substance
50000	Formaldehyde Methylene oxide
50077	Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione,6-amino-8-[((aminocarbonyl)oxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl- Mitomycin C
50180	Cyclophosphamide 2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino]tetrahydro-2-oxide
50293	DDT 4,4' DDT Dichlorodiphenyl trichloroethane
50328	Benzo[a]pyrene 3,4-Benzopyrene
50555	Reserpine Yohimban-16-carboxylic acid,11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-,methyl ester
51285	2,4-Dinitrophenol Phenol, 2,4-dinitro-
51434	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]- Epinephrine
51796	Carbamic acid, ethyl ester Ethyl carbamate (Urethan)
52686	Trichlorfon
52857	Famphur Phosphorothioic acid, O,O-dimethyl-O-[p-[(dimethylamino)-sulfonyl]phenyl] ester
53703	Dibenz[a,h]anthracene 1,2:5,6-Dibenzanthracene Dibenzo[a,h]anthracene
53963	Acetamide, N-9H-fluoren-2-yl- 2-Acetylaminofluorene
54115	Nicotine and salts Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-,and salts
55185	Ethanamine, N-ethyl-N-nitroso- N-Nitrosodiethylamine
55630	Nitroglycerine 1,2,3-Propanetriol, trinitrate-
55914	Diisopropyl fluorophosphate Phosphorofluoridic acid,bis(1-methylethyl) ester
56042	Methylthiouracil 4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-
56235	Carbon tetrachloride Methane, tetrachloro-
56382	Parathion Phosphorothioic acid,O,O-diethyl O-(p-nitrophenyl)ester
56495	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl- 3-Methylcholanthrene
56531	Diethylstilbestrol 4,4'-Stilbenediol, alpha,alpha'-diethyl-
56553	Benz[a]anthracene 1,2-Benzanthracene Benzo[a]anthracene
56724	Coumaphos
57125	Cyanides (soluble cyanide salts), not elsewhere specified
57147	1,1-Dimethylhydrazine Hydrazine, 1,1-dimethyl-
57249	Strychnidin-10-one, and salts Strychnine and salts
57749	Chlordane Chlordane, technical 4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-
57976	1,2-Benzanthracene, 7,12-dimethyl- 7,12-Dimethylbenz[a]anthracene
58899	gamma - BHC Hexachlorocyclohexane (gamma isomer) Lindane
58902	Phenol, 2,3,4,6-tetrachloro- 2,3,4,6-Tetrachlorophenol
59507	4-Chloro-m-cresol p-Chloro-m-cresol Phenol, 4-chloro-3-methyl-
60004	Ethylenediamine tetraacetic acid (EDTA)
60117	Benzenamine, N,N-dimethyl-4-phenylazo- Dimethylaminoazobenzene
60297	Ethane, 1,1'-oxybis- Ethyl ether

CASRN	Hazardous Substance
60344	Hydrazine, methyl-
	Methyl hydrazine
60515	Dimethoate
	Phosphorodithioic acid,O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester
60571	Dieldrin
	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene
61825	Amitrole
	1H-1,2,4-Triazol-3-amine
62384	Mercury, (acetato-O)phenyl-
	Phenylmercuric acetate
62442	Acetamide, N-(4-ethoxyphenyl)-
	Phenacetin
62500	Ethyl methanesulfonate
	Methanesulfonic acid, ethyl ester
62533	Aniline
	Benzenamine
62555	Ethanethioamide
	Thioacetamide
62566	Carbamide, thio-
	Thiourea
62737	Dichlorvos
62748	Acetic acid, fluoro-, sodium salt
	Fluoroacetic acid, sodium salt
62759	Dimethylnitrosamine
	N-Nitrosodimethylamine
63252	Carbaryl
64186	Formic acid
	Methanoic acid
64197	Acetic acid
65850	Benzoic acid
66751	Uracil, 5-[bis(2-chloroethyl)amino]-
	Uracil mustard
67561	Methanol
	Methyl alcohol
67641	Acetone
	2-Propanone
67663	Chloroform
	Methane, trichloro-
67721	Ethane, 1,1,1,2,2,2-hexachloro-
	Hexachloroethane
70257	Guanidine, N-nitroso-N-methyl-N'-nitro-
	N-Methyl-N'-nitro-N-nitrosoguanidine
70304	Hexachlorophene
	2,2'-Methylenebis(3,4,6-trichlorophenol)
71363	1-Butanol
	n-Butyl alcohol
71432	Benzene
71556	Methyl chloroform
	1,1,1-Trichloroethane
72208	Endrin
	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene
72435	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)-
	Methoxychlor
72548	DDD
	4,4' DDD
	Dichlorodiphenyl dichloroethane
	TDE
72559	DDE
	4,4' DDE
72571	2,7-Naphthalenedisulfonic acid,3,3'-[(3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt
	Trypan blue
74839	Methane, bromo-
	Methyl bromide
74873	Methane, chloro-
	Methyl chloride
74884	Methane, iodo-
	Methyl iodide
74895	Monomethylamine
74908	Hydrocyanic acid
	Hydrogen cyanide
74931	Methanethiol
	Methylmercaptan
	Thiomethanol
74953	Methane, dibromo-
	Methylene bromide
75003	Chloroethane
75014	Ethene, chloro-
	Vinyl chloride
75047	Monoethylamine
75058	Acetonitrile
	Ethanenitrile
75070	Acetaldehyde
	Ethanal
75092	Methane, dichloro-
	Methylene chloride
75150	Carbon bisulfide
	Carbon disulfide
75207	Calcium carbide
75218	Ethylene oxide
	Oxirane
75252	Bromoform
	Methane, tribromo-
75274	Dichlorobromomethane
75343	1,1-Dichloroethane
	Ethane, 1,1-dichloro-
	Ethylidene dichloride
75354	1,1-Dichloroethylene
	Ethene, 1,1-dichloro-
	Vinylidene chloride
75365	Acetyl chloride
	Ethanoyl chloride
75445	Carbonyl chloride
	Phosgene
75503	Trimethylamine
75558	2-Methylaziridine
	1,2-Propylenimine
75569	Propylene oxide
75605	Cacodylic acid
	Hydroxydimethylarsine oxide
75649	tert-Butylamine
75694	Methane, trichlorofluoro-
	Trichloromonofluoromethane
75718	Dichlorodifluoromethane
	Methane, dichlorodifluoro-
75865	Acetone cyanohydrin
	2-Methyllactonitrile
	Propanenitrile, 2-hydroxy-2-methyl-
75876	Acetaldehyde, trichloro-
	Chloral
75990	2,2-Dichloropropionic acid
76017	Ethane, pentachloro-
	Pentachloroethane
76448	Heptachlor
	4,7-Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-
77474	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-
	Hexachlorocyclopentadiene
77781	Dimethyl sulfate
	Sulfuric acid, dimethyl ester
78002	Plumbane, tetraethyl-
	Tetraethyl lead
78591	Isophorone
78795	Isoprene
78819	iso-Butylamine
78831	Isobutyl alcohol
	1-Propanol, 2-methyl-
78875	1,2-Dichloropropane
	Propylene dichloride

CASRN	Hazardous Substance
78886	2,3-Dichloropropene (isomer)
78933	2-Butanone
	Methyl ethyl ketone
78999	1,1-Dichloropropane
79005	Ethane, 1,1,2-trichloro-
	1,1,2-Trichloroethane
79016	Trichloroethene
	Trichloroethylene
79061	Acrylamide
	2-Propenamide
79094	Propionic acid
79107	Acrylic acid
	2-Propenoic acid
79196	Hydrazinecarbothioamide
	Thiosemicarbazide
79221	Carbonochloridic acid, methyl ester
	Methyl chlorocarbonate
79312	iso-Butyric acid
79345	Ethane, 1,1,2,2-tetrachloro-
	1,1,2,2-Tetrachloroethane
79447	Carbamoyl chloride, dimethyl-
	Dimethylcarbamoyl chloride
79469	2-Nitropropane
	Propane, 2-nitro-
80159	alpha,alpha-Dimethylbenzylhydroperoxide
	Hydroperoxide, 1-methyl-1-phenylethyl-
80626	Methyl methacrylate
	2-Propenoic acid, 2-methyl-, methyl ester
81072	1,2-Benzisothiazolin-3-one,1,1-dioxide, and salts
	Saccharin and salts
81812	3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts
	Warfarin
82688	Benzene, pentachloronitro-
	Pentachloronitrobenzene
83329	Acenaphthene
84662	1,2-Benzenedicarboxylic acid,diethyl ester
	Diethyl phthalate
84742	1,2-Benzenedicarboxylic acid,dibutyl ester
	n-Butyl phthalate
	Dibutyl phthalate
	Di-n-butyl phthalate
85007	Diquat
85018	Phenanthrene
85449	1,2-Benzenedicarboxylic acid anhydride
	Phthalic anhydride
85687	Butyl benzyl phthalate
86306	N-Nitrosodiphenylamine
86500	Guthion
86737	Fluorene
86884	alpha-Naphthylthiourea
	Thiourea, 1-naphthalenyl-
87650	2,6-Dichlorophenol
	Phenol, 2,6-dichloro-
87683	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
	Hexachlorobutadiene
87865	Pentachlorophenol
	Phenol, pentachloro-
88062	Phenol, 2,4,6-trichloro
	2,4,6-Trichlorophenol
88722	o-Nitrotoluene
88755	o-Nitrophenol
	2-Nitrophenol
88857	Dinoseb
	Phenol, 2,4-dinitro-6-(1-methylpropyl)-
91087	Benzene, 2,4-diisocyanatomethyl-
	Toluene diisocyanate
91203	Naphthalene
91225	Quinoline
91587	beta-Chloronaphthalene
	2-Chloronaphthalene
	Naphthalene, 2-chloro-
91598	2-Naphthylamine
	beta-Naphthylamine
91805	Methapyrilene
	Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylamino]-
91941	(1,1'-Biphenyl)-4,4'diamine,3,3'dichloro-
	3,3'-Dichlorobenzidine
92875	Benzidine
	(1,1'-Biphenyl)-4,4'diamine
93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)-
	Silvex
	2,4,5-TP acid
93765	2,4,5-T
	2,4,5-T acid
	2,4,5-Trichlorophenoxyacetic acid
93798	2,4,5-T esters
94111	2,4-D Esters
94586	Benzene, 1,2-methylenedioxy-4-propyl-
	Dihydrosafrole
94597	Benzene, 1,2-methylenedioxy-4-allyl-
	Safrole
94757	2,4-D Acid
	2,4-D, salts and esters
	2,4-Dichlorophenoxyacetic acid, salts and esters
94791	2,4-D Esters
94804	2,4-D Esters
95476	Benzene, o-dimethyl-
	o-Xylene
95487	o-Cresol
	o-Cresylic acid
95501	Benzene, 1,2-dichloro-
	1,2-Dichlorobenzene
	o-Dichlorobenzene
95534	o-Toluidine
	2-Amino-1-methyl benzene
95578	2-Chlorophenol
	o-Chlorophenol
	Phenol, 2-chloro-
95807	Diaminotoluene
	Toluenediamine
95943	Benzene, 1,2,4,5-tetrachloro-
	1,2,4,5-Tetrachlorobenzene
95954	Phenol, 2,4,5-trichloro-
	2,4,5-Trichlorophenol
96128	1,2-Dibromo-3-chloropropane
	Propane, 1,2-dibromo-3-chloro-
96457	Ethylenethiourea
	2-Imidazolidinethione
97632	Ethyl methacrylate
	2-Propenoic acid, 2-methyl-, ethyl ester
98011	2-Furancarboxaldehyde
	Furfural
98077	Benzene, trichloromethyl-
	Benzotrichloride
98099	Benzenesulfonic acid chloride
	Benzenesulfonyl chloride
98828	Benzene, 1-methylethyl-
	Cumene
98862	Acetophenone
	Ethanone, 1-phenyl-
98873	Benzal chloride
	Benzene, dichloromethyl-
98884	Benzoyl chloride
98953	Benzene, nitro-
	Nitrobenzene
99081	m-Nitrotoluene
99354	Benzene, 1,3,5-trinitro-
	sym-Trinitrobenzene
99558	Benzenamine, 2-methyl-5-nitro-
	5-Nitro-o-toluidine

CASRN	Hazardous Substance
99650	m-Dinitrobenzene
99990	p-Nitrotoluene
100016	Benzenamine, 4-nitro-
	p-Nitroaniline
100027	p-Nitrophenol
	4-Nitrophenol
	Phenol, 4-nitro-
100254	p-Dinitrobenzene
100414	Ethylbenzene
100425	Styrene
100447	Benzene, chloromethyl-
	Benzyl chloride
100470	Benzonitrile
100754	N-Nitrosopiperidine
	Pyridine, hexahydro-N-nitroso-
101144	Benzenamine, 4,4'-methylenebis(2-chloro-
	4,4'-Methylenebis(2-chloroaniline)
101553	Benzene, 1-bromo-4-phenoxy-
	4-Bromophenyl phenyl ether
103855	N-Phenylthiourea
	Thiourea, phenyl-
105464	sec-Butyl acetate
105679	2,4-Dimethylphenol
	Phenol, 2,4-dimethyl-
106423	Benzene, p-dimethyl-
	p-Xylene
106445	p-Cresol
	p-Cresylic acid
106467	Benzene, 1,4-dichloro-
	1,4-Dichlorobenzene
	p-Dichlorobenzene
106478	Benzenamine, 4-chloro-
	p-Chloroaniline
106490	p-Toluidine
	4-Amino-1-methyl benzene
106514	p-Benzoquinone
	1,4-Cyclohexadienedione
106898	1-Chloro-2,3-epoxypropane
	Epichlorohydrin
	Oxirane, 2-(chloromethyl)-
106934	Ethane, 1,2-dibromo-
	Ethylene dibromide
107028	Acrolein
	2-Propenal
107051	Allyl chloride
107062	1,2-Dichloroethane
	Ethane, 1,2-dichloro-
	Ethylene dichloride
107108	1-Propanamine
	n-Propylamine
107120	Ethyl cyanide
	Propanenitrile
107131	Acrylonitrile
	2-Propenenitrile
107153	Ethylenediamine
107186	Allyl alcohol
	2-Propen-1-ol
107197	Propargyl alcohol
	2-Propyn-1-ol
107200	Acetaldehyde, chloro-
	Chloroacetaldehyde
107302	Chloromethyl methyl ether
	Methane, chloromethoxy-
107493	Pyrophosphoric acid, tetraethyl ester
	Tetraethyl pyrophosphate
107926	Butyric acid
108054	Vinyl acetate
108101	Methyl isobutyl ketone
	4-Methyl-2-pentanone
108247	Acetic anhydride
108316	2,5-Furandione
	Maleic anhydride
108383	Benzene, m-dimethyl-
	m-Xylene
108394	m-Cresol
	m-Cresylic acid
108463	1,3-Benzenediol
	Resorcinol
108601	Bis(2-chloroisopropyl) ether
	Propane, 2,2'-oxybis(2-chloro-
108883	Benzene, methyl-
	Toluene
108907	Benzene, chloro-
	Chlorobenzene
108941	Cyclohexanone
108952	Benzene, hydroxy-
	Phenol
108985	Benzenethiol
	Thiophenol
109068	2-Picoline
	Pyridine, 2-methyl-
109739	Butylamine
109773	Malononitrile
	Propanedinitrile
109897	Diethylamine
109999	Furan, tetrahydro-
	Tetrahydrofuran
110009	Furan
	Furfuran
110167	Maleic acid
110178	Fumaric acid
110190	iso-Butyl acetate
110758	2-Chloroethyl vinyl ether
	Ethene, 2-chloroethoxy-
110805	Ethylene glycol monoethyl ether
	2-Ethoxyethanol
110827	Benzene, hexahydro-
	Cyclohexane
110861	Pyridine
111444	Bis (2-chloroethyl) ether
	Dichloroethyl ether
	Ethane, 1,1'-oxybis(2-chloro-
111546	1,2-Ethanediylbiscarbamodithioic acid
	Ethylenebis(dithiocarbamic acid)
111911	Bis(2-chloroethoxy) methane
	Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-
115026	Azaserine
	L-Serine, diazoacetate (ester)
115297	Endosulfan
	5-Norbornene-2,3-dimethanol,1,4,5,6,7,7-hexachloro,cyclic sulfite
115322	Kelthane
116063	Aldicarb
	Propanal, 2-methyl-2-(methylthio)-,O-[(methylamino)carbonyl]oxime
117806	Dichlone
117817	1,2-Benzenedicarboxylic acid,[bis(2-ethylhexyl)] ester
	Bis(2-ethylhexyl)phthalate
117840	1,2-Benzenedicarboxylic acid,di-n-octyl ester
	Di-n-octyl phthalate
118741	Benzene, hexachloro-
	Hexachlorobenzene
119904	(1,1'-Biphenyl)-4,4'diamine,3,3'dimethoxy-
	3,3'-Dimethoxybenzidine
119937	(1,1'Biphenyl)-4,4'-diamine,3,3'-dimethyl-
	3,3'-Dimethylbenzidine
120127	Anthracene
120581	Benzene, 1,2-methylenedioxy-4-propenyl-
	Isosafrole
120821	1,2,4-Trichlorobenzene
120832	2,4-Dichlorophenol
	Phenol, 2,4-dichloro-
121142	Benzene, 1-methyl-2,4-dinitro-
	2,4-Dinitrotoluene

CASRN	Hazardous Substance
121211	Pyrethrins
121299	Pyrethrins
121448	Triethylamine
121755	Malathion
122098	alpha,alpha-Dimethylphenethylamine
	Ethanamine, 1,1-dimethyl-2-phenyl-
122667	1,2-Diphenylhydrazine
	Hydrazine, 1,2-diphenyl-
123331	1,2-Dihydro-3,6-pyridazinedione
	Maleic hydrazide
123626	Propionic anhydride
123637	Paraldehyde
	1,3,5-Trioxane, 2,4,6-trimethyl-
123739	2-Butenal
	Crotonaldehyde
123864	Butyl acetate
123911	1,4-Diethylene dioxide
	1,4-Dioxane
123922	iso-Amyl acetate
124049	Adipic acid
124403	Dimethylamine
	Methanamine, N-methyl-
124414	Sodium methylate
124481	Chlorodibromomethane
126727	1-Propanol, 2,3-dibromo-, phosphate (3:1)
	Tris(2,3-dibromopropyl) phosphate
126987	Methacrylonitrile
	2-Propenenitrile, 2-methyl-
127184	Ethene, 1,1,2,2-tetrachloro-
	Tetrachloroethylene
127822	Zinc phenolsulfonate
129000	Pyrene
130154	1,4-Naphthalenedione
	1,4-Naphthoquinone
131113	1,2-Benzenedicarboxylic acid,dimethyl ester
	Dimethyl phthalate
131748	Ammonium picrate
	Phenol, 2,4,6-trinitro-, ammonium salt
131895	4,6-Dinitro-o-cyclohexylphenol
	Phenol, 2-cyclohexyl-4,6-dinitro-
133062	Captan
134327	1-Naphthylamine
	alpha-Naphthylamine
137268	Bis(dimethylthiocarbamoyl) disulfide
	Thiram
140885	Ethyl acrylate
	2-Propenoic acid, ethyl ester
141786	Acetic acid, ethyl ester
	Ethyl acetate
142289	1,3-Dichloropropane
142712	Cupric acetate
142847	Dipropylamine
	1-Propanamine, N-propyl-
143339	Sodium cyanide
143500	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
	Kepone
145733	Endothall
	7-Oxabicyclo[2,2,1]heptane-2,3-dicarboxylic acid
148823	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-,L-
	Melphalan
151508	Potassium cyanide
151564	Aziridine
	Ethylenimine
152169	Diphosphoramide, octamethyl-
	Octamethylpyrophosphoramide
156605	1,2-trans-Dichloroethylene
	Ethene, trans-1,2-dichloro-
189559	1,2:7,8-Dibenzopyrene
	Dibenz[a,i]pyrene
191242	Benzo[ghi]perylene
193395	Indeno(1,2,3-cd)pyrene
	1,10-(1,2-Phenylene)pyrene
205992	Benzo[b]fluoranthene
206440	Benzo[j,k]fluorene
	Fluoranthene
207089	Benzo[k]fluoranthene
208968	Acenaphthylene
218019	1,2-Benzphenanthrene
	Chrysene
225514	Benz[c]acridine
	3,4-Benzacridine
297972	O,O-Diethyl O-pyrazinyl phosphorothioate
	Phosphorothioic acid, O,O-diethyl, O-pyrazinyl ester
298000	Methyl parathion
	O,O-Dimethyl O-p-nitrophenyl phosphorothioate
298022	Phorate
	Phosphorodithioic acid, O,O-diethyl S-(ethylthio),methyl ester
298044	O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate
	Disulfoton
300765	Naled
301042	Acetic acid, lead salt
	Lead acetate
302012	Diamine
	Hydrazine
303344	Lasiocarpine
305033	Butanoic acid, 4-[bis(2-chloroethyl)amino] benzene-
	Chlorambucil
309002	Aldrin
	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,exo-dimethanonaphthalene
311455	Diethyl-p-nitrophenyl phosphate
	Phosphoric acid,diethyl,p-nitrophenyl ester
315184	Mexacarbate
319846	alpha - BHC
319857	beta - BHC
319868	delta - BHC
329715	2,5-Dinitrophenol
330541	Diuron
333415	Diazinon
353504	Carbon oxyfluoride
	Carbonyl fluoride
357573	Brucine
	Strychnidin-10-one, 2,3-dimethoxy-
460195	Cyanogen
465736	Hexachlorohexahydro-endo,endo-dimethanonaphthalene
	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,endo-dimethanonaphthalene
492808	Auramine
	Benzenamine, 4,4'-carbonimidoylbis (N,N-dimethyl-
494031	Chlornaphazine
	2-Naphthylamine, N,N-bis(2-chloroethyl)-
496720	Diaminotoluene
	Toluenediamine
504245	4-Aminopyridine
	4-Pyridinamine
504609	1-Methylbutadiene
	1,3-Pentadiene
506616	Potassium silver cyanide
506649	Silver cyanide
506683	Bromine cyanide
	Cyanogen bromide
506774	Chlorine cyanide
	Cyanogen chloride
506876	Ammonium carbonate
506967	Acetyl bromide
509148	Methane, tetranitro-
	Tetranitromethane

CASRN	Hazardous Substance
510156	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-,ethyl ester Ethyl 4,4'-dichlorobenzilate
513495	sec-Butylamine
528290	o-Dinitrobenzene
534521	4,6-Dinitro-o-cresol and salts Phenol,2,4-dinitro-6-methyl-, and salts
540738	1,2-Dimethylhydrazine Hydrazine, 1,2-dimethyl-
540885	tert-Butyl acetate
541093	Uranyl acetate
541537	2,4-Dithiobiuret Thioimidodicarbonic diamide
541731	Benzene, 1,3-dichloro- 1,3-Dichlorobenzene m-Dichlorobenzene
542621	Barium cyanide
542756	Propene, 1,3-dichloro- 1,3-Dichloropropene
542767	3-Chloropropionitrile Propanenitrile, 3-chloro-
542881	Bis(chloromethyl) ether Methane, oxybis(chloro-
543908	Cadmium acetate
544183	Cobaltous formate
544923	Copper cyanide
554847	m-Nitrophenol
557197	Nickel cyanide Nickel(II) cyanide
557211	Zinc cyanide
557346	Zinc acetate
557415	Zinc formate
563122	Ethion
563688	Acetic acid, thallium(I) salt Thallium(I) acetate
573568	2,6-Dinitrophenol
584849	Benzene, 2,4-diisocyanatomethyl- Toluene diisocyanate
591082	Acetamide, N-(aminothioxomethyl)- 1-Acetyl-2-thiourea
592018	Calcium cyanide
592041	Mercuric cyanide
592858	Mercuric thiocyanate
592870	Lead thiocyanate
594423	Methanesulfenyl chloride, trichloro- Trichloromethanesulfenyl chloride
598312	Bromoacetone 2-Propanone, 1-bromo-
606202	Benzene, 1-methyl-2,6-dinitro- 2,6-Dinitrotoluene
608935	Benzene, pentachloro- Pentachlorobenzene
609198	3,4,5-Trichlorophenol
610399	3,4-Dinitrotoluene
615532	Carbamic acid, methylnitroso-,ethyl ester N-Nitroso-N-methylurethane
621647	Di-n-propylnitrosamine N-Nitrosodi-n-propylamine
624839	Isocyanic acid, methyl ester Methyl isocyanate
625161	tert-Amyl acetate
626380	sec-Amyl acetate
628637	Amyl acetate
628864	Fulminic acid, mercury(II)salt Mercury fulminate
630104	Carbamimidoselenoic acid Selenourea
630206	Ethane, 1,1,1,2-tetrachloro- 1,1,1,2-Tetrachloroethane
631618	Ammonium acetate
636215	Benzenamine, 2-methyl-, hydrochloride o-Toluidine hydrochloride
640197	Acetamide, 2-fluoro- Fluoroacetamide
684935	Carbamide, N-methyl-N-nitroso- N-Nitroso-N-methylurea
692422	Arsine, diethyl- Diethylarsine
696286	Dichlorophenylarsine Phenyl dichloroarsine
757584	Hexaethyl tetraphosphate Tetraphosphoric acid, hexaethyl ester
759739	Carbamide, N-ethyl-N-nitroso- N-Nitroso-N-ethylurea
764410	2-Butene, 1,4-dichloro- 1,4-Dichloro-2-butene
765344	Glycidylaldehyde 1-Propanal, 2,3-epoxy-
815827	Cupric tartrate
823405	Diaminotoluene Toluenediamine
924163	1-Butanamine, N-butyl-N-nitroso- N-Nitrosodi-n-butylamine
930552	N-Nitrosopyrrolidine Pyrrole, tetrahydro-N-nitroso-
933755	2,3,6-Trichlorophenol
933788	2,3,5-Trichlorophenol
959988	alpha - Endosulfan
1024573	Heptachlor epoxide
1031078	Endosulfan sulfate
1066304	Chromic acetate
1066337	Ammonium bicarbonate
1072351	Lead stearate
1111780	Ammonium carbamate
1116547	Ethanol, 2,2'-(nitrosoimino)bis- N-Nitrosodiethanolamine
1120714	1,2-Oxathiolane, 2,2-dioxide 1,3-Propane sultone
1185575	Ferric ammonium citrate
1194656	Dichlobenil
1300716	Xylenol
1303282	Arsenic(V) oxide Arsenic pentoxide
1303328	Arsenic disulfide
1303339	Arsenic trisulfide
1309644	Antimony trioxide
1310583	Potassium hydroxide
1310732	Sodium hydroxide
1314325	Thallic oxide Thallium(III) oxide
1314621	Vanadium pentoxide Vanadium(V) oxide
1314803	Phosphorus pentasulfide Phosphorus sulfide Sulfur phosphide
1314847	Zinc phosphide
1314870	Lead sulfide
1319728	2,4,5-T amines
1319773	Cresol(s) Cresylic acid
1320189	2,4-D Esters
1321126	Nitrotoluene
1327522	Arsenic acid
1327533	Arsenic(III) oxide Arsenic trioxide
1330207	Benzene, dimethyl- Xylene
1332076	Zinc borate
1332214	Asbestos
1333831	Sodium bifluoride
1335326	Lead subacetate
1336216	Ammonium hydroxide
1336363	POLYCHLORINATED BIPHENYLS (PCBs) Aroclors

CASRN	Hazardous Substance
1338234	2-Butanone peroxide
	Methyl ethyl ketone peroxide
1338245	Naphthenic acid
1341497	Ammonium bifluoride
1464535	2,2'-Bioxirane
	1,2:3,4-Diepoxybutane
1563662	Carbofuran
1615801	N,N'-Diethylhydrazine
	Hydrazine, 1,2-diethyl-
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin(TCDD)
1762954	Ammonium thiocyanate
1863634	Ammonium benzoate
1888717	Hexachloropropene
	1-Propene, 1,1,2,3,3,3-hexachloro-
1918009	Dicamba
1928387	2,4-D Esters
1928478	2,4,5-T esters
1928616	2,4-D Esters
1929733	2,4-D Esters
2008460	2,4,5-T amines
2032657	Mercaptodimethur
2303164	Diallate
	S-(2,3-Dichloroallyl) diisopropylthiocarbamate
2312358	Propargite
2545597	2,4,5-T esters
2763964	5-(Aminomethyl)-3-isoxazolol
	3(2H)-Isoxazolone, 5-(aminomethyl)-
2764729	Diquat
2921882	Chlorpyrifos
2944674	Ferric ammonium oxalate
2971382	2,4-D Esters
3012655	Ammonium citrate, dibasic
3164292	Ammonium tartrate
3165933	Benzenamine, 4-chloro-2-methyl-,hydrochloride
	4-Chloro-o-toluidine, hydrochloride
3251238	Cupric nitrate
3288582	O,O-Diethyl S-methyl dithiophosphate
	Phosphorodithioic acid, O,O-diethyl S-methylester
3486359	Zinc carbonate
3689245	Dithiopyrophosphoric acid,tetraethyl ester
	Tetraethyldithiopyrophosphate
3813147	2,4,5-T amines
4170303	2-Butenal
	Crotonaldehyde
4549400	Ethenamine, N-methyl-N-nitroso-
	N-Nitrosomethylvinylamine
5344821	1-(o-Chlorophenyl)thiourea
	Thiourea, (2-chlorophenyl)-
5893663	Cupric oxalate
5972736	Ammonium oxalate
6009707	Ammonium oxalate
6369966	2,4,5-T amines
6369977	2,4,5-T amines
6533739	Carbonic acid, dithallium (I) salt
	Thallium(I) carbonate
7005723	4-Chlorophenyl phenyl ether
7421934	Endrin aldehyde
7428480	Lead stearate
7439921	Lead
7439976	Mercury
7440020	Nickel
7440224	Silver
7440235	Sodium
7440280	Thallium
7440360	Antimony
7440382	Arsenic
7440417	Beryllium
	Beryllium dust
7440439	Cadmium
7440473	Chromium
7440508	Copper
7440666	Zinc
7446084	Selenium dioxide
	Selenium oxide
7446142	Lead sulfate
7446186	Sulfuric acid, thallium(I) salt
	Thallium(I) sulfate
7446277	Lead phosphate
	Phosphoric acid, lead salt
7447394	Cupric chloride
7488564	Selenium disulfide
	Sulfur selenide
7558794	Sodium phosphate, dibasic
7601549	Sodium phosphate, tribasic
7631892	Sodium arsenate
7631905	Sodium bisulfite
7632000	Sodium nitrite
7645252	Lead arsenate
7646857	Zinc chloride
7647010	Hydrochloric acid
7647189	Antimony pentachloride
7664382	Phosphoric acid
7664393	Hydrofluoric acid
	Hydrogen fluoride
7664417	Ammonia
7664939	Sulfuric acid
7681494	Sodium fluoride
7681529	Sodium hypochlorite
7697372	Nitric acid
7699458	Zinc bromide
7705080	Ferric chloride
7718549	Nickel chloride
7719122	Phosphorus trichloride
7720787	Ferrous sulfate
7722647	Potassium permanganate
7723140	Phosphorus
7733020	Zinc sulfate
7738945	Chromic acid
7758294	Sodium phosphate, tribasic
7758943	Ferrous chloride
7758954	Lead chloride
7758987	Cupric sulfate
7761888	Silver nitrate
7773060	Ammonium sulfamate
7775113	Sodium chromate
7778394	Arsenic acid
7778441	Calcium arsenate
7778509	Potassium bichromate
7778543	Calcium hypochlorite
7779864	Zinc hydrosulfite
7779886	Zinc nitrate
7782414	Fluorine
7782492	Selenium
7782505	Chlorine
7782630	Ferrous sulfate
7782823	Sodium selenite
7782867	Mercurous nitrate
7783008	Selenious acid
7783064	Hydrogen sulfide
	Hydrosulfuric acid
	Sulfur hydride

CASRN	Hazardous Substance
7783188	Ammonium thiosulfate
7783359	Mercuric sulfate
7783462	Lead fluoride
7783495	Zinc fluoride
7783508	Ferric fluoride
7783564	Antimony trifluoride
7784341	Arsenic trichloride
7784409	Lead arsenate
7784410	Potassium arsenate
7784465	Sodium arsenite
7785844	Sodium phosphate, tribasic
7786347	Mevinphos
7786814	Nickel sulfate
7787475	Beryllium chloride
7787497	Beryllium fluoride
7787555	Beryllium nitrate
7788989	Ammonium chromate
7789006	Potassium chromate
7789062	Strontium chromate
7789095	Ammonium bichromate
7789426	Cadmium bromide
7789437	Cobaltous bromide
7789619	Antimony tribromide
7790945	Chlorosulfonic acid
7791120	Thallium(I) chloride
7803512	Hydrogen phosphide
	Phosphine
7803556	Ammonium vanadate
	Vanadic acid, ammonium salt
8001352	Camphene, octachloro-
	Toxaphene
8001589	Creosote
8003198	Dichloropropane - Dichloropropene (mixture)
8003347	Pyrethrins
8014957	Sulfuric acid
10022705	Sodium hypochlorite
10025873	Phosphorus oxychloride
10025919	Antimony trichloride
10026116	Zirconium tetrachloride
10028225	Ferric sulfate
10031591	Sulfuric acid, thallium(I) salt
	Thallium(I) sulfate
10039324	Sodium phosphate, dibasic
10043013	Aluminum sulfate
10045893	Ferrous ammonium sulfate
10045940	Mercuric nitrate
10049055	Chromous chloride
10099748	Lead nitrate
10101538	Chromic sulfate
10101630	Lead iodide
10101890	Sodium phosphate, tribasic
10102064	Uranyl nitrate
10102188	Sodium selenite
10102439	Nitric oxide
	Nitrogen(II) oxide
10102440	Nitrogen dioxide
	Nitrogen(IV) oxide
10102451	Thallium(I) nitrate
10102484	Lead arsenate
10108642	Cadmium chloride
10124502	Potassium arsenite
10124568	Sodium phosphate, tribasic
10140655	Sodium phosphate, dibasic
10192300	Ammonium bisulfite
10196040	Ammonium sulfite
10361894	Sodium phosphate, tribasic
10380297	Cupric sulfate ammoniated
10415755	Mercurous nitrate
10421484	Ferric nitrate
10544726	Nitrogen dioxide
	Nitrogen(IV) oxide
10588019	Sodium bichromate
11096825	Aroclor 1260
	Polychlorinated Biphenyls (PCBs)
11097691	Aroclor 1254
	Polychlorinated Biphenyls (PCBs)
11104282	Aroclor 1221
	Polychlorinated Biphenyls (PCBs)
11115745	Chromic acid
11141165	Aroclor 1232
	Polychlorinated Biphenyls (PCBs)
12002038	Cupric acetoarsenite
12039520	Thallium(I) selenide
12054487	Nickel hydroxide
12125018	Ammonium fluoride
12125029	Ammonium chloride
12135761	Ammonium sulfide
12672296	Aroclor 1248
	Polychlorinated Biphenyls (PCBs)
12674112	Aroclor 1016
	Polychlorinated Biphenyls (PCBs)
12771083	Sulfur monochloride
13463393	Nickel carbonyl
	Nickel tetracarbonyl
13560991	2,4,5-T salts
13597994	Beryllium nitrate
13746899	Zirconium nitrate
13765190	Calcium chromate
	Chromic acid, calcium salt
13814965	Lead fluoborate
13826830	Ammonium fluoborate
13952846	sec-Butylamine
14017415	Cobaltous sulfamate
14216752	Nickel nitrate
14258492	Ammonium oxalate
14307358	Lithium chromate
14307438	Ammonium tartrate
14639975	Zinc ammonium chloride
14639986	Zinc ammonium chloride
14644612	Zirconium sulfate
15699180	Nickel ammonium sulfate
15739807	Lead sulfate
15950660	2,3,4-Trichlorophenol
16721805	Sodium hydrosulfide
16752775	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-,methyl ester
	Methomyl
16871719	Zinc silicofluoride
16919190	Ammonium silicofluoride
16923958	Zirconium potassium fluoride
18883664	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-
	Streptozotocin
20816120	Osmium oxide
	Osmium tetroxide
20830813	Daunomycin
	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-
20859738	Aluminum phosphide
23950585	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide
	Pronamide
25154545	Dinitrobenzene (mixed)
25154556	Nitrophenol (mixed)
25155300	Sodium dodecylbenzene sulfonate
25167822	Trichlorophenol
25168154	2,4,5-T esters
25168267	2,4-D Esters
25321146	Dinitrotoluene
25321226	Dichlorobenzene (mixed)
25376458	Diaminotoluene
	Toluenediamine

CASRN	Hazardous Substance
25550587	Dinitrophenol
26264062	Calcium dodecylbenzene sulfonate
26471625	Benzene, 2,4-diisocyanatomethyl-
	Toluene diisocyanate
26628228	Sodium azide
26638197	Dichloropropane
26952238	Dichloropropene(s)
27176870	Dodecylbenzenesulfonic acid
27323417	Triethanolamine dodecylbenzene sulfonate
27774136	Vanadyl sulfate
28300745	Antimony potassium tartrate
30525894	Paraformaldehyde
32534955	2,4,5-TP acid esters
33213659	beta - Endosulfan
36478769	Uranyl nitrate
37211055	Nickel chloride
39196184	3,3-Dimethyl-1-(methylthio)-2-butanone,O-[(methylamino)carbonyl] oxime
	Thiofanox
42504461	Isopropanolamine dodecylbenzene sulfonate
52628258	Zinc ammonium chloride
52652592	Lead stearate
52740166	Calcium arsenite
53467111	2,4-D Esters
53469219	Aroclor 1242
	Polychlorinated Biphenyls (PCBs)
55488874	Ferric ammonium oxalate
56189094	Lead stearate
61792072	2,4,5-T esters

[50 FR 13474, Apr. 4, 1985, as amended at 51 FR 34541, Sept. 29, 1986; 52 FR 45767, Dec. 22, 1986; 53 FR 43881, 43884, Oct. 31, 1988]

APPENDIX B TO § 302.4—RADIONUCLIDES

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Radionuclides*		1§ (3.7E 10)
Actinium-224	89	100 (3.7E 12)
Actinium-225	89	1 (3.7E 10)
Actinium-226	89	10 (3.7E 11)
Actinium-227	89	0.001 (3.7E 7)
Actinium-228	89	10 (3.7E 11)
Aluminum-26	13	10 (3.7E 11)
Americium-237	95	1000 (3.7E 13)
Americium-238	95	100 (3.7E 12)
Americium-239	95	100 (3.7E 12)
Americium-240	95	10 (3.7E 11)
Americium-241	95	0.01 (3.7E 8)
Americium-242m	95	0.01 (3.7E 8)
Americium-242	95	100 (3.7E 12)
Americium-243	95	0.01 (3.7E 8)
Americium-244m	95	1000 (3.7E 13)
Americium-244	95	10 (3.7E 11)
Americium-245	95	1000 (3.7E 13)
Americium-246m	95	1000 (3.7E 13)
Americium-246	95	1000 (3.7E 13)
Antimony-115	51	1000 (3.7E 13)
Antimony-116m	51	100 (3.7E 12)
Antimony-116	51	1000 (3.7E 13)
Antimony-117	51	1000 (3.7E 13)
Antimony-118m	51	10 (3.7E 11)
Antimony-119	51	1000 (3.7E 13)
Antimony-120 (16 min)	51	1000 (3.7E 13)
Antimony-120 (5.76 day)	51	10 (3.7E 11)
Antimony-122	51	10 (3.7E 11)
Antimony-124m	51	1000 (3.7E 13)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Antimony-124	51	10 (3.7E 11)
Antimony-125	51	10 (3.7E 11)
Antimony-126m	51	1000 (3.7E 13)
Antimony-126	51	10 (3.7E 11)
Antimony-127	51	10 (3.7E 11)
Antimony-128 (10.4 min)	51	1000 (3.7E 13)
Antimony-128 (9.01 hr)	51	10 (3.7E 11)
Antimony-129	51	100 (3.7E 12)
Antimony-130	51	100 (3.7E 12)
Antimony-131	51	1000 (3.7E 13)
Argon-39	18	1000 (3.7E 13)
Argon-41	18	10 (3.7E 11)
Arsenic-69	33	1000 (3.7E 13)
Arsenic-70	33	100 (3.7E 12)
Arsenic-71	33	100 (3.7E 12)
Arsenic-72	33	10 (3.7E 11)
Arsenic-73	33	100 (3.7E 12)
Arsenic-74	33	10 (3.7E 11)
Arsenic-76	33	100 (3.7E 12)
Arsenic-77	33	1000 (3.7E 13)
Arsenic-78	33	100 (3.7E 12)
Astatine-207	85	100 (3.7E 12)
Astatine-211	85	100 (3.7E 12)
Barium-126	56	1000 (3.7E 13)
Barium-128	56	10 (3.7E 11)
Barium-131m	56	1000 (3.7E 13)
Barium-131	56	10 (3.7E 11)
Barium-133m	56	100 (3.7E 12)
Barium-133	56	10 (3.7E 11)
Barium-135m	56	1000 (3.7E 13)
Barium-139	56	1000 (3.7E 13)
Barium-140	56	10 (3.7E 11)
Barium-141	56	1000 (3.7E 13)
Barium-142	56	1000 (3.7E 13)
Berkelium-245	97	100 (3.7E 12)
Berkelium-246	97	10 (3.7E 11)
Berkelium-247	97	0.01 (3.7E 8)
Berkelium-249	97	1 (3.7E 10)
Berkelium-250	97	100 (3.7E 12)
Beryllium-7	4	100 (3.7E 12)
Beryllium-10	4	1 (3.7E 10)
Bismuth-200	83	100 (3.7E 12)
Bismuth-201	83	100 (3.7E 12)
Bismuth-202	83	1000 (3.7E 13)
Bismuth-203	83	10 (3.7E 11)
Bismuth-205	83	10 (3.7E 11)
Bismuth-206	83	10 (3.7E 11)
Bismuth-207	83	10 (3.7E 11)
Bismuth-210m	83	0.1 (3.7E 9)
Bismuth-210	83	10 (3.7E 11)
Bismuth-212	83	100 (3.7E 12)
Bismuth-213	83	100 (3.7E 12)
Bismuth-214	83	100 (3.7E 12)
Bromine-74m	35	100 (3.7E 12)
Bromine-74	35	100 (3.7E 12)
Bromine-75	35	100 (3.7E 12)
Bromine-76	35	10 (3.7E 11)
Bromine-77	35	100 (3.7E 12)
Bromine-80m	35	1000 (3.7E 13)
Bromine-80	35	1000 (3.7E 13)
Bromine-82	35	10 (3.7E 11)
Bromine-83	35	1000 (3.7E 13)
Bromine-84	35	100 (3.7E 12)
Cadmium-104	48	1000 (3.7E 13)
Cadmium-107	48	1000 (3.7E 13)
Cadmium-109	48	1 (3.7E 10)
Cadmium-113m	48	0.1 (3.7E 9)
Cadmium-113	48	0.1 (3.7E 9)
Cadmium-115m	48	10 (3.7E 11)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Cadmium-115	48	100 (3.7E 12)
Cadmium-117m	48	10 (3.7E 11)
Cadmium-117	48	100 (3.7E 12)
Calcium-41	20	10 (3.7E 11)
Calcium-45	20	10 (3.7E 11)
Calcium-47	20	10 (3.7E 11)
Californium-244	98	1000 (3.7E 13)
Californium-246	98	10 (3.7E 11)
Californium-248	98	0.1 (3.7E 9)
Californium-249	98	0.01 (3.7E 8)
Californium-250	98	0.01 (3.7E 8)
Californium-251	98	0.01 (3.7E 8)
Californium-252	98	0.1 (3.7E 9)
Californium-253	98	10 (3.7E 11)
Californium-254	98	0.1 (3.7E 9)
Carbon-11	6	1000 (3.7E 13)
Carbon-14	6	10 (3.7E 11)
Cerium-134	58	10 (3.7E 11)
Cerium-135	58	10 (3.7E 11)
Cerium-137m	58	100 (3.7E 12)
Cerium-137	58	1000 (3.7E 13)
Cerium-139	58	100 (3.7E 12)
Cerium-141	58	10 (3.7E 11)
Cerium-143	58	100 (3.7E 12)
Cerium-144	58	1 (3.7E 10)
Cesium-125	55	1000 (3.7E 13)
Cesium-127	55	100 (3.7E 12)
Cesium-129	55	100 (3.7E 12)
Cesium-130	55	1000 (3.7E 13)
Cesium-131	55	1000 (3.7E 13)
Cesium-132	55	10 (3.7E 11)
Cesium-134m	55	1000 (3.7E 13)
Cesium-134	55	1 (3.7E 10)
Cesium-135m	55	100 (3.7E 12)
Cesium-135	55	10 (3.7E 11)
Cesium-136	55	10 (3.7E 11)
Cesium-137	55	1 (3.7E 10)
Cesium-138	55	100 (3.7E 12)
Chlorine-36	17	10 (3.7E 11)
Chlorine-38	17	100 (3.7E 12)
Chlorine-39	17	100 (3.7E 12)
Chromium-48	24	100 (3.7E 12)
Chromium-49	24	1000 (3.7E 13)
Chromium-51	24	1000 (3.7E 13)
Cobalt-55	27	10 (3.7E 11)
Cobalt-56	27	10 (3.7E 11)
Cobalt-57	27	100 (3.7E 12)
Cobalt-58m	27	1000 (3.7E 13)
Cobalt-58	27	10 (3.7E 11)
Cobalt-60m	27	1000 (3.7E 13)
Cobalt-60	27	10 (3.7E 11)
Cobalt-61	27	1000 (3.7E 13)
Cobalt-62m	27	1000 (3.7E 13)
Copper-60	29	100 (3.7E 12)
Copper-61	29	100 (3.7E 12)
Copper-64	29	1000 (3.7E 13)
Copper-67	29	100 (3.7E 12)
Curium-238	96	1000 (3.7E 13)
Curium-240	96	1 (3.7E 10)
Curium-241	96	10 (3.7E 11)
Curium-242	96	1 (3.7E 10)
Curium-243	96	0.01 (3.7E 8)
Curium-244	96	0.01 (3.7E 8)
Curium-245	96	0.01 (3.7E 8)
Curium-246	96	0.01 (3.7E 8)
Curium-247	96	0.01 (3.7E 8)
Curium-248	96	0.001 (3.7E 7)
Curium-249	96	1000 (3.7E 13)
Dysprosium-155	66	100 (3.7E 12)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Dysprosium-157	66	100 (3.7E 12)
Dysprosium-159	66	100 (3.7E 12)
Dysprosium-165	66	1000 (3.7E 13)
Dysprosium-166	66	10 (3.7E 11)
Einsteinium-250	99	10 (3.7E 11)
Einsteinium-251	99	1000 (3.7E 13)
Einsteinium-253	99	10 (3.7E 11)
Einsteinium-254m	99	1 (3.7E 10)
Einsteinium-254	99	0.1 (3.7E 9)
Erbium-161	68	100 (3.7E 12)
Erbium-165	68	1000 (3.7E 13)
Erbium-169	68	100 (3.7E 12)
Erbium-171	68	100 (3.7E 12)
Erbium-172	68	10 (3.7E 11)
Europium-145	63	10 (3.7E 11)
Europium-146	63	10 (3.7E 11)
Europium-147	63	10 (3.7E 11)
Europium-148	63	10 (3.7E 11)
Europium-149	63	100 (3.7E 12)
Europium-150 (12.6 hr)	63	1000 (3.7E 13)
Europium-150 (34.2 yr)	63	10 (3.7E 11)
Europium-152m	63	100 (3.7E 12)
Europium-152	63	10 (3.7E 11)
Europium-154	63	10 (3.7E 11)
Europium-155	63	10 (3.7E 11)
Europium-156	63	10 (3.7E 11)
Europium-157	63	10 (3.7E 11)
Europium-158	63	1000 (3.7E 13)
Fermium-252	100	10 (3.7E 11)
Fermium-253	100	10 (3.7E 11)
Fermium-254	100	100 (3.7E 12)
Fermium-255	100	100 (3.7E 12)
Fermium-257	100	1 (3.7E 10)
Fluorine-18	9	1000 (3.7E 13)
Francium-222	87	100 (3.7E 12)
Francium-223	87	100 (3.7E 12)
Gadolinium-145	64	100 (3.7E 12)
Gadolinium-146	64	10 (3.7E 11)
Gadolinium-147	64	10 (3.7E 11)
Gadolinium-148	64	0.001 (3.7E7)
Gadolinium-149	64	100 (3.7E 12)
Gadolinium-151	64	100 (3.7E 12)
Gadolinium-152	64	0.001 (3.7E7)
Gadolinium-153	64	10 (3.7E 11)
Gadolinium-159	64	1000 (3.7E 13)
Gallium-65	31	1000 (3.7E 13)
Gallium-66	31	10 (3.7E 11)
Gallium-67	31	100 (3.7E 12)
Gallium-68	31	1000 (3.7E 13)
Gallium-70	31	1000 (3.7E 13)
Gallium-72	31	10 (3.7E 11)
Gallium-73	31	100 (3.7E 12)
Germanium-66	32	100 (3.7E 12)
Germanium-67	32	1000 (3.7E 13)
Germanium-68	32	10 (3.7E 11)
Germanium-69	32	10 (3.7E 11)
Germanium-71	32	1000 (3.7E 13)
Germanium-75	32	1000 (3.7E 13)
Germanium-77	32	10 (3.7E 11)
Germanium-78	32	1000 (3.7E 13)
Gold-193	79	100 (3.7E 12)
Gold-194	79	10 (3.7E 11)
Gold-195	79	100 (3.7E 12)
Gold-198m	79	10 (3.7E 11)
Gold-198	79	100 (3.7E 12)
Gold-199	79	100 (3.7E 12)
Gold-200m	79	10 (3.7E 11)
Gold-200	79	1000 (3.7E 13)
Gold-201	79	1000 (3.7E 13)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Hafnium-170	72	100 (3.7E 12)
Hafnium-172	72	1 (3.7E 10)
Hafnium-173	72	100 (3.7E 12)
Hafnium-175	72	100 (3.7E 12)
Hafnium-177m	72	1000 (3.7E 13)
Hafnium-178m	72	0.1 (3.7E 9)
Hafnium-179m	72	100 (3.7E 12)
Hafnium-180m	72	100 (3.7E 12)
Hafnium-181	72	10 (3.7E 11)
Hafnium-182m	72	100 (3.7E 12)
Hafnium-182	72	0.1 (3.7E 9)
Hafnium-183	72	100 (3.7E 12)
Hafnium-184	72	100 (3.7E 12)
Holmium-155	67	1000 (3.7E 13)
Holmium-157	67	1000 (3.7E 13)
Holmium-159	67	1000 (3.7E 13)
Holmium-161	67	1000 (3.7E 13)
Holmium-162m	67	1000 (3.7E 13)
Holmium-162	67	1000 (3.7E 13)
Holmium-164m	67	1000 (3.7E 13)
Holmium-164	67	1000 (3.7E 13)
Holmium-166m	67	1 (3.7E 10)
Holmium-166	67	100 (3.7E 12)
Holmium-167	67	100 (3.7E 12)
Hydrogen-3	1	100 (3.7E 12)
Indium-109	49	100 (3.7E 12)
Indium-110 (69.1 min)	49	100 (3.7E 12)
Indium-110 (4.9 hr)	49	10 (3.7E 11)
Indium-111	49	100 (3.7E 12)
Indium-112	49	1000 (3.7E 13)
Indium-113m	49	1000 (3.7E 13)
Indium-114m	49	10 (3.7E 11)
Indium-115m	49	100 (3.7E 12)
Indium-115	49	0.1 (3.7E 9)
Indium-116m	49	100 (3.7E 12)
Indium-117m	49	100 (3.7E 12)
Indium-117	49	1000 (3.7E 13)
Indium-119m	49	1000 (3.7E 13)
Iodine-120m	53	100 (3.7E 12)
Iodine-120	53	10 (3.7E 11)
Iodine-121	53	100 (3.7E 12)
Iodine-123	53	10 (3.7E 11)
Iodine-124	53	0.1 (3.7E 9)
Iodine-125	53	0.01 (3.7E 8)
Iodine-126	53	0.01 (3.7E 8)
Iodine-128	53	1000 (3.7E 13)
Iodine-129	53	0.001 (3.7E 7)
Iodine-130	53	1 (3.7E 10)
Iodine-131	53	0.01 (3.7E 8)
Iodine-132m	53	10 (3.7E 11)
Iodine-132	53	10 (3.7E 11)
Iodine-133	53	0.1 (3.7E 9)
Iodine-134	53	100 (3.7E 12)
Iodine-135	53	10 (3.7E 11)
Iridium-182	77	1000 (3.7E 13)
Iridium-184	77	100 (3.7E 12)
Iridium-185	77	100 (3.7E 12)
Iridium-186	77	10 (3.7E 11)
Iridium-187	77	100 (3.7E 12)
Iridium-188	77	10 (3.7E 11)
Iridium-189	77	100 (3.7E 12)
Iridium-190m	77	1000 (3.7E 13)
Iridium-190	77	10 (3.7E 11)
Iridium-192m	77	100 (3.7E 12)
Iridium-192	77	10 (3.7E 11)
Iridium-194m	77	10 (3.7E 11)
Iridium-194	77	100 (3.7E 12)
Iridium-195m	77	100 (3.7E 12)
Iridium-195	77	1000 (3.7E 13)
Iron-52	26	100 (3.7E 12)
Iron-55	26	100 (3.7E 12)
Iron-59	26	10 (3.7E 11)
Iron-60	26	0.1 (3.7E 9)
Krypton-74	36	10 (3.7E 11)
Krypton-76	36	10 (3.7E 11)
Krypton-77	36	10 (3.7E 11)
Krypton-79	36	100 (3.7E 12)
Krypton-81	36	1000 (3.7E 13)
Krypton-83m	36	1000 (3.7E 13)
Krypton-85m	36	100 (3.7E 12)
Krypton-85	36	1000 (3.7E 13)
Krypton-87	36	10 (3.7E 11)
Krypton-88	36	10 (3.7E 11)
Lanthanum-131	57	1000 (3.7E 13)
Lanthanum-132	57	100 (3.7E 12)
Lanthanum-135	57	1000 (3.7E 13)
Lanthanum-137	57	10 (3.7E 11)
Lanthanum-138	57	1 (3.7E 10)
Lanthanum-140	57	10 (3.7E 11)
Lanthanum-141	57	1000 (3.7E 13)
Lanthanum-142	57	100 (3.7E 12)
Lanthanum-143	57	1000 (3.7E 13)
Lead-195m	82	1000 (3.7E 13)
Lead-198	82	100 (3.7E 12)
Lead-199	82	100 (3.7E 12)
Lead-200	82	100 (3.7E 12)
Lead-201	82	100 (3.7E 12)
Lead-202m	82	10 (3.7E 11)
Lead-202	82	1 (3.7E 10)
Lead-203	82	100 (3.7E 12)
Lead-205	82	100 (3.7E 12)
Lead-209	82	1000 (3.7E 13)
Lead-210	82	0.01 (3.7E 8)
Lead-211	82	100 (3.7E 12)
Lead-212	82	10 (3.7E 11)
Lead-214	82	100 (3.7E 12)
Lutetium-169	71	10 (3.7E 11)
Lutetium-170	71	10 (3.7E 11)
Lutetium-171	71	10 (3.7E 11)
Lutetium-172	71	10 (3.7E 11)
Lutetium-173	71	100 (3.7E 12)
Lutetium-174m	71	10 (3.7E 11)
Lutetium-174	71	10 (3.7E 11)
Lutetium-176m	71	1000 (3.7E 13)
Lutetium-176	71	1 (3.7E 10)
Lutetium-177m	71	10 (3.7E 11)
Lutetium-177	71	100 (3.7E 12)
Lutetium-178m	71	1000 (3.7E 13)
Lutetium-178	71	1000 (3.7E 13)
Lutetium-179	71	1000 (3.7E 13)
Magnesium-28	12	10 (3.7E 11)
Manganese-51	25	1000 (3.7E 13)
Manganese-52m	25	1000 (3.7E 13)
Manganese-52	25	10 (3.7E 11)
Manganese-53	25	1000 (3.7E 13)
Manganese-54	25	10 (3.7E 11)
Manganese-56	25	100 (3.7E 12)
Mendelevium-257	101	100 (3.7E 12)
Mendelevium-258	101	1 (3.7E 10)
Mercury-193m	80	10 (3.7E 11)
Mercury-193	80	100 (3.7E 12)
Mercury-194	80	0.1 (3.7E 9)
Mercury-195m	80	100 (3.7E 12)
Mercury-195	80	100 (3.7E 12)
Mercury-197m	80	1000 (3.7E 13)
Mercury-197	80	1000 (3.7E 13)
Mercury-199m	80	1000 (3.7E 13)
Mercury-203	80	10 (3.7E 11)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Molybdenum-90	42	100 (3.7E 12)
Molybdenum-93m	42	10 (3.7E 11)
Molybdenum-93	42	100 (3.7E 12)
Molybdenum-99	42	100 (3.7E 12)
Molybdenum-101	42	1000 (3.7E 13)
Neodymium-136	60	1000 (3.7E 13)
Neodymium-138	60	1000 (3.7E 13)
Neodymium-139m	60	100 (3.7E 12)
Neodymium-139	60	1000 (3.7E 13)
Neodymium-141	60	1000 (3.7E 13)
Neodymium-147	60	10 (3.7E 11)
Neodymium-149	60	100 (3.7E 12)
Neodymium-151	60	1000 (3.7E 13)
Neptunium-232	93	1000 (3.7E 13)
Neptunium-233	93	1000 (3.7E 13)
Neptunium-234	93	10 (3.7E 11)
Neptunium-235	93	1000 (3.7E 13)
Neptunium-236 (1.2 E 5 yr)	93	0.1 (3.7E 9)
Neptunium-236 (22.5 hr)	93	100 (3.7E 12)
Neptunium-237	93	0.01 (3.7E 8)
Neptunium-238	93	10 (3.7E 11)
Neptunium-239	93	100 (3.7E 12)
Neptunium-240	93	100 (3.7E 12)
Nickel-56	28	10 (3.7E 11)
Nickel-57	28	10 (3.7E 11)
Nickel-59	28	100 (3.7E 12)
Nickel-63	28	100 (3.7E 12)
Nickel-65	28	100 (3.7E 12)
Nickel-66	28	10 (3.7E 11)
Niobium-88	41	100 (3.7E 12)
Niobium-89 (66 min)	41	100 (3.7E 12)
Niobium-89 (122 min)	41	100 (3.7E 12)
Niobium-90	41	10 (3.7E 11)
Niobium-93m	41	100 (3.7E 12)
Niobium-94	41	10 (3.7E 11)
Niobium-95m	41	100 (3.7E 12)
Niobium-95	41	10 (3.7E 11)
Niobium-96	41	10 (3.7E 11)
Niobium-97	41	100 (3.7E 12)
Niobium-98	41	1000 (3.7E 13)
Osmium-180	76	1000 (3.7E 13)
Osmium-181	76	100 (3.7E 12)
Osmium-182	76	100 (3.7E 12)
Osmium-185	76	10 (3.7E 11)
Osmium-189m	76	1000 (3.7E 13)
Osmium-191m	76	1000 (3.7E 13)
Osmium-191	76	100 (3.7E 12)
Osmium-193	76	100 (3.7E 12)
Osmium-194	76	1 (3.7E 10)
Palladium-100	46	100 (3.7E 12)
Palladium-101	46	100 (3.7E 12)
Palladium-103	46	100 (3.7E 12)
Palladium-107	46	100 (3.7E 12)
Palladium-109	46	1000 (3.7E 13)
Phosphorus-32	15	0.1 (3.7E 9)
Phosphorus-33	15	1 (3.7E 10)
Platinum-186	78	100 (3.7E 12)
Platinum-188	78	100 (3.7E 12)
Platinum-189	78	100 (3.7E 12)
Platinum-191	78	100 (3.7E 12)
Platinum-193m	78	100 (3.7E 12)
Platinum-193	78	1000 (3.7E 13)
Platinum-195m	78	100 (3.7E 12)
Platinum-197m	78	1000 (3.7E 13)
Platinum-197	78	1000 (3.7E 13)
Platinum-199	78	1000 (3.7E 13)
Platinum-200	78	100 (3.7E 12)
Plutonium-234	94	1000 (3.7E 13)
Plutonium-235	94	1000 (3.7E 13)
Plutonium-236	94	0.1 (3.7E 9)
Plutonium-237	94	1000 (3.7E 13)
Plutonium-238	94	0.01 (3.7E 8)
Plutonium-239	94	0.01 (3.7E 8)
Plutonium-240	94	0.01 (3.7E 8)
Plutonium-241	94	1 (3.7E 10)
Plutonium-242	94	0.01 (3.7E 8)
Plutonium-243	94	1000 (3.7E 13)
Plutonium-244	94	0.01 (3.7E 8)
Plutonium-245	94	100 (3.7E 12)
Polonium-203	84	100 (3.7E 12)
Polonium-205	84	100 (3.7E 12)
Polonium-207	84	10 (3.7E 11)
Polonium-210	84	0.01 (3.7E 8)
Potassium-40	19	1 (3.7E 10)
Potassium-42	19	100 (3.7E 12)
Potassium-43	19	10 (3.7E 11)
Potassium-44	19	100 (3.7E 12)
Potassium-45	19	1000 (3.7E 13)
Praseodymium-136	59	1000 (3.7E 13)
Praseodymium-137	59	1000 (3.7E 13)
Praseodymium-138m	59	100 (3.7E 12)
Praseodymium-139	59	1000 (3.7E 13)
Praseodymium-142m	59	1000 (3.7E 13)
Praseodymium-142	59	100 (3.7E 12)
Praseodymium-143	59	10 (3.7E 11)
Praseodymium-144	59	1000 (3.7E 13)
Praseodymium-145	59	1000 (3.7E 13)
Praseodymium-147	59	1000 (3.7E 13)
Promethium-141	61	1000 (3.7E 13)
Promethium-143	61	100 (3.7E 12)
Promethium-144	61	10 (3.7E 11)
Promethium-145	61	100 (3.7E 12)
Promethium-146	61	10 (3.7E 11)
Promethium-147	61	10 (3.7E 11)
Promethium-148m	61	10 (3.7E 11)
Promethium-148	61	10 (3.7E 11)
Promethium-149	61	100 (3.7E 12)
Promethium-150	61	100 (3.7E 12)
Promethium-151	61	100 (3.7E 12)
Protactinium-227	91	100 (3.7E 12)
Protactinium-228	91	10 (3.7E 11)
Protactinium-230	91	10 (3.7E 11)
Protactinium-231	91	0.01 (3.7E 8)
Protactinium-232	91	10 (3.7E 11)
Protactinium-233	91	100 (3.7E 12)
Protactinium-234	91	10 (3.7E 11)
Radium-223	88	1 (3.7E 10)
Radium-224	88	10 (3.7E 11)
Radium-225	88	1 (3.7E 10)
Radium-226Φ	88	0.1 (3.7E 9)
Radium-227	88	1000 (3.7E 13)
Radium-228	88	0.1 (3.7E 9)
Radon-220	86	0.1 (3.7E 9)
Radon-222	86	0.1 (3.7E 9)
Rhenium-177	75	1000 (3.7E 13)
Rhenium-178	75	1000 (3.7E 13)
Rhenium-181	75	100 (3.7E 12)
Rhenium-182 (12.7 hr)	75	10 (3.7E 11)
Rhenium-182 (64.0 hr)	75	10 (3.7E 11)
Rhenium-184m	75	10 (3.7E 11)
Rhenium-184	75	10 (3.7E 11)
Rhenium-186m	75	10 (3.7E 11)
Rhenium-186	75	100 (3.7E 12)
Rhenium-187	75	1000 (3.7E 13)
Rhenium-188m	75	1000 (3.7E 13)
Rhenium-188	75	1000 (3.7E 13)
Rhenium-189	75	1000 (3.7E 13)
Rhodium-99m	45	100 (3.7E 12)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Rhodium-99	45	10 (3.7E 11)
Rhodium-100	45	10 (3.7E 11)
Rhodium-101m	45	100 (3.7E 12)
Rhodium-101	45	10 (3.7E 11)
Rhodium-102m	45	10 (3.7E 11)
Rhodium-102	45	10 (3.7E 11)
Rhodium-103m	45	1000 (3.7E 13)
Rhodium-105	45	100 (3.7E 12)
Rhodium-106m	45	10 (3.7E 11)
Rhodium-107	45	1000 (3.7E 13)
Rubidium-79	37	1000 (3.7E 13)
Rubidium-81m	37	1000 (3.7E 13)
Rubidium-81	37	100 (3.7E 12)
Rubidium-82m	37	10 (3.7E 11)
Rubidium-83	37	10 (3.7E 11)
Rubidium-84	37	10 (3.7E 11)
Rubidium-86	37	10 (3.7E 11)
Rubidium-88	37	1000 (3.7E 13)
Rubidium-89	37	1000 (3.7E 13)
Rubidium-87	37	10 (3.7E 11)
Ruthenium-94	44	1000 (3.7E 13)
Ruthenium-97	44	100 (3.7E 12)
Ruthenium-103	44	10 (3.7E 11)
Ruthenium-105	44	100 (3.7E 12)
Ruthenium-106	44	1 (3.7E 10)
Samarium-141m	62	1000 (3.7E 13)
Samarium-141	62	1000 (3.7E 13)
Samarium-142	62	1000 (3.7E 13)
Samarium-145	62	100 (3.7E 12)
Samarium-146	62	0.01 (3.7E 8)
Samarium-147	62	0.01 (3.7E 8)
Samarium-151	62	10 (3.7E 11)
Samarium-153	62	100 (3.7E 12)
Samarium-155	62	1000 (3.7E 13)
Samarium-156	62	100 (3.7E 12)
Scandium-43	21	1000 (3.7E 13)
Scandium-44m	21	10 (3.7E 11)
Scandium-44	21	100 (3.7E 12)
Scandium-46	21	10 (3.7E 11)
Scandium-47	21	100 (3.7E 12)
Scandium-48	21	10 (3.7E 11)
Scandium-49	21	1000 (3.7E 13)
Selenium-70	34	1000 (3.7E 13)
Selenium-73m	34	100 (3.7E 12)
Selenium-73	34	10 (3.7E 11)
Selenium-75	34	10 (3.7E 11)
Selenium-79	34	10 (3.7E 11)
Selenium-81m	34	1000 (3.7E 13)
Selenium-81	34	1000 (3.7E 13)
Selenium-83	34	1000 (3.7E 13)
Silicon-31	14	1000 (3.7E 13)
Silicon-32	14	1 (3.7E 10)
Silver-102	47	100 (3.7E 12)
Silver-103	47	1000 (3.7E 13)
Silver-104m	47	1000 (3.7E 13)
Silver-104	47	1000 (3.7E 13)
Silver-105	47	10 (3.7E 11)
Silver-106m	47	10 (3.7E 11)
Silver-106	47	1000 (3.7E 13)
Silver-108m	47	10 (3.7E 11)
Silver-110m	47	10 (3.7E 11)
Silver-111	47	10 (3.7E 11)
Silver-112	47	100 (3.7E 12)
Silver-115	47	1000 (3.7E 13)
Sodium-22	11	10 (3.7E 11)
Sodium-24	11	10 (3.7E 11)
Strontium-80	38	100 (3.7E 12)
Strontium-81	38	1000 (3.7E 13)
Strontium-83	38	100 (3.7E 12)
Strontium-85m	38	1000 (3.7E 13)
Strontium-85	38	10 (3.7E 11)
Strontium-87m	38	100 (3.7E 12)
Strontium-89	38	10 (3.7E 11)
Strontium-90	38	0.1 (3.7E 9)
Strontium-91	38	10 (3.7E 11)
Strontium-92	38	100 (3.7E 12)
Sulfur-35	16	1 (3.7E 10)
Tantalum-172	73	100 (3.7E 12)
Tantalum-173	73	100 (3.7E 12)
Tantalum-174	73	100 (3.7E 12)
Tantalum-175	73	100 (3.7E 12)
Tantalum-176	73	10 (3.7E 11)
Tantalum-177	73	1000 (3.7E 13)
Tantalum-178	73	1000 (3.7E 13)
Tantalum-179	73	1000 (3.7E 13)
Tantalum-180m	73	1000 (3.7E 13)
Tantalum-180	73	100 (3.7E 12)
Tantalum-182m	73	1000 (3.7E 13)
Tantalum-182	73	10 (3.7E 11)
Tantalum-183	73	100 (3.7E 12)
Tantalum-184	73	10 (3.7E 11)
Tantalum-185	73	1000 (3.7E 13)
Tantalum-186	73	1000 (3.7E 13)
Technetium-93m	43	1000 (3.7E 13)
Technetium-93	43	100 (3.7E 12)
Technetium-94m	43	100 (3.7E 12)
Technetium-94	43	10 (3.7E 11)
Technetium-96m	43	1000 (3.7E 13)
Technetium-96	43	10 (3.7E 11)
Technetium-97m	43	100 (3.7E 12)
Technetium-97	43	100 (3.7E 12)
Technetium-98	43	10 (3.7E 11)
Technetium-99m	43	100 (3.7E 12)
Technetium-99	43	10 (3.7E 11)
Technetium-101	43	1000 (3.7E 13)
Technetium-104	43	1000 (3.7E 13)
Tellurium-116	52	1000 (3.7E 13)
Tellurium-121m	52	10 (3.7E 11)
Tellurium-121	52	10 (3.7E 11)
Tellurium-123m	52	10 (3.7E 11)
Tellurium-123	52	10 (3.7E 11)
Tellurium-125m	52	10 (3.7E 11)
Tellurium-127m	52	10 (3.7E 11)
Tellurium-127	52	1000 (3.7E 13)
Tellurium-129m	52	10 (3.7E 11)
Tellurium-129	52	1000 (3.7E 13)
Tellurium-131m	52	10 (3.7E 11)
Tellurium-131	52	1000 (3.7E 13)
Tellurium-132	52	10 (3.7E 11)
Tellurium-133m	52	1000 (3.7E 13)
Tellurium-133	52	1000 (3.7E 13)
Tellurium-134	52	1000 (3.7E 13)
Terbium-147	65	100 (3.7E 12)
Terbium-149	65	100 (3.7E 12)
Terbium-150	65	100 (3.7E 12)
Terbium-151	65	10 (3.7E 11)
Terbium-153	65	100 (3.7E 12)
Terbium-154	65	10 (3.7E 11)
Terbium-155	65	100 (3.7E 12)
Terbium-156m (5.0 hr)	65	1000 (3.7E 13)
Terbium-156m (24.4 hr)	65	1000 (3.7E 13)
Terbium-156	65	10 (3.7E 11)
Terbium-157	65	100 (3.7E 12)
Terbium-158	65	10 (3.7E 11)
Terbium-160	65	10 (3.7E 11)
Terbium-161	65	100 (3.7E 12)
Thallium-194m	81	100 (3.7E 12)
Thallium-194	81	1000 (3.7E 13)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Thallium-195	81	100 (3.7E 12)
Thallium-197	81	100 (3.7E 12)
Thallium-198m	81	100 (3.7E 12)
Thallium-198	81	10 (3.7E 11)
Thallium-199	81	100 (3.7E 12)
Thallium-200	81	10 (3.7E 11)
Thallium-201	81	1000 (3.7E 13)
Thallium-202	81	10 (3.7E 11)
Thallium-204	81	10 (3.7E 11)
Thorium-226	90	100 (3.7E 12)
Thorium-227	90	1 (3.7E 10)
Thorium-228	90	0.01 (3.7E 8)
Thorium-229	90	0.001 (3.7E 7)
Thorium-230	90	0.01 (3.7E 8)
Thorium-231	90	100 (3.7E 12)
Thorium-232Φ	90	0.001 (3.7E 7)
Thorium-234	90	100 (3.7E 12)
Thulium-162	69	1000 (3.7E 13)
Thulium-166	69	10 (3.7E 11)
Thulium-167	69	100 (3.7E 12)
Thulium-170	69	10 (3.7E 11)
Thulium-171	69	100 (3.7E 12)
Thulium-172	69	100 (3.7E 12)
Thulium-173	69	100 (3.7E 12)
Thulium-175	69	1000 (3.7E 13)
Tin-110	50	100 (3.7E 12)
Tin-111	50	1000 (3.7E 13)
Tin-113	50	10 (3.7E 11)
Tin-117m	50	100 (3.7E 12)
Tin-119m	50	10 (3.7E 11)
Tin-121m	50	10 (3.7E 11)
Tin-121	50	1000 (3.7E 13)
Tin-123m	50	1000 (3.7E 13)
Tin-123	50	10 (3.7E 11)
Tin-125	50	10 (3.7E 11)
Tin-126	50	1 (3.7E 10)
Tin-127	50	100 (3.7E 12)
Tin-128	50	1000 (3.7E 13)
Titanium-44	22	1 (9.7E 10)
Titanium-45	22	1000 (3.7E 13)
Tungsten-176	74	1000 (3.7E 13)
Tungsten-177	74	100 (3.7E 12)
Tungsten-178	74	100 (3.7E 12)
Tungsten-179	74	1000 (3.7E 13)
Tungsten-181	74	100 (3.7E 12)
Tungsten-185	74	10 (3.7E 11)
Tungsten-187	74	100 (3.7E 12)
Tungsten-188	74	10 (3.7E 11)
Uranium-230	92	1 (3.7E 10)
Uranium-231	92	1000 (3.7E 13)
Uranium-232	92	0.01 (3.7E 8)
Uranium-233	92	0.1 (3.7E 9)
Uranium-234ϕ	92	0.1 (3.7E 9)
Uranium-235ϕ	92	0.1 (3.7E 9)
Uranium-236	92	0.1 (3.7E 9)
Uranium-237	92	100 (3.7E 12)
Uranium-238ϕ	92	0.1& (3.7E 9)
Uranium-239	92	1000 (3.7E 13)
Uranium-240	92	1000 (3.7E 13)
Vanadium-47	23	1000 (3.7E 13)
Vanadium-48	23	10 (3.7E 11)
Vanadium-49	23	1000 (3.7E 13)
Xenon-120	54	100 (3.7E 12)
Xenon-121	54	10 (3.7E 11)
Xenon-122	54	100 (3.7E 12)
Xenon-123	54	10 (3.7E 11)
Xenon-125	54	100 (3.7E 12)
Xenon-127	54	100 (3.7E 12)
Xenon-129m	54	1000 (3.7E 13)
Xenon-131m	54	1000 (3.7E 13)
Xenon-133m	54	1000 (3.7E 13)
Xenon-133	54	1000 (3.7E 13)
Xenon-135m	54	10 (3.7E 11)
Xenon-135	54	100 (3.7E 12)
Xenon-138	54	10 (3.7E 11)
Ytterbium-162	70	1000 (3.7E 13)
Ytterbium-166	70	10 (3.7E 11)
Ytterbium-167	70	1000 (3.7E 13)
Ytterbium-169	70	10 (3.7E 11)
Ytterbium-175	70	100 (3.7E 12)
Ytterbium-177	70	1000 (3.7E 13)
Ytterbium-178	70	1000 (3.7E 13)
Yttrium-86m	39	1000 (3.7E 13)
Yttrium-86	39	10 (3.7E 11)
Yttrium-87	39	10 (3.7E 11)
Yttrium-88	39	10 (3.7E 11)
Yttrium-90m	39	100 (3.7E 12)
Yttrium-90	39	10 (3.7E 11)
Yttrium-91m	39	1000 (3.7E 13)
Yttrium-91	39	10 (3.7E 11)
Yttrium-92	39	100 (3.7E 12)
Yttrium-93	39	100 (3.7E 12)
Yttrium-94	39	1000 (3.7E 13)
Yttrium-95	39	1000 (3.7E 13)
Zinc-62	30	100 (3.7E 12)
Zinc-63	30	1000 (3.7E 13)
Zinc-65	30	10 (3.7E 11)
Zinc-69m	30	100 (3.7E 12)
Zinc-69	30	1000 (3.7E 13)
Zinc-71m	30	100 (3.7E 12)
Zinc-72	30	100 (3.7E 12)
Zirconium-86	40	100 (3.7E 12)
Zirconium-88	40	10 (3.7E 11)
Zirconium-89	40	100 (3.7E 12)
Zirconium-93	40	1 (3.7E 10)

APPENDIX B TO § 302.4—RADIONUCLIDES—Continued

Radionuclide	Atomic Number	Final RQ Ci (Bq)
Zirconium-95	40	10 (3.7E 11)
Zirconium-97	40	10 (3.7E 11)

Ci—Curie. The curie represents a rate of radioactive decay. One curie is the quantity of any radioactive nuclide which undergoes 3.7E 10 disintegrations per second.

Bq—Becquerel. The becquerel represents a rate of radioactive decay. One becquerel is the quantity of any radioactive nuclide which undergoes one disintegration per second. One curie is equal to 3.7E 10 becquerel.

*—Final RQs for all radionuclides apply to chemical compounds containing the radionuclides and elemental forms regardless of the diameter of pieces of solid material.

&—The adjusted RQ of one curie applies to all radionuclides not otherwise listed. Whenever the RQs in Table 302.4 and this appendix to the table are in conflict, the lowest RQ shall apply. For example, uranyl acetate and uranyl nitrate have adjusted RQs shown in Table 302.4 of 100 pounds, equivalent to about one-tenth the RQ level for uranium-238 listed in this appendix.

E—Exponent to the base 10. For example, 1.3E 2 is equal to 130 while 1.3E 3 is equal to 1300.

m—Signifies a nuclear isomer which is a radionuclide in a higher energy metastable state relative to the parent isotope.

ϕ—Notification requirements for releases of mixtures or solutions of radionuclides can be found in Section 302.6(b) of this rule. Final RQs for the following four common radionuclide mixtures are provided: radium-226 in secular equilibrium with its daughters (0.053 curie); natural uranium (0.1 curie); natural uranium in secular equilibrium with its daughters (0.052 curie); and natural thorium in secular equilibrium with its daughters (0.011 curie).

[54 FR 22538, May 24, 1989]

EFFECTIVE DATE NOTE: At 54 FR 22538, May 24, 1989, Appendix B was added to the Table in § 302.4, effective July 24, 1989.

§ 302.5 Determination of reportable quantities.

(a) *Listed hazardous substances.* The quantity listed in the column "Final RQ" for each substance in Table 302.4, or in Appendix B to Table 302.4, is the reportable quantity (RQ) for that substance. The RQs in Table 302.4 are in units of pounds based on chemical toxicity, while the RQs in Appendix B to Table 302.4 are in units of curies based on radiation hazard. Whenever the RQs in Table 302.4 and Appendix B to the table are in conflict, the lowest RQ shall apply.

(b) *Unlisted hazardous substances.* Unlisted hazardous substances designated by 40 CFR 302.4(b) have the reportable quantity of 100 pounds, except for those unlisted hazardous wastes which exhibit extraction procedure (EP) toxicity identified in 40 CFR 261.24. Unlisted hazardous wastes which exhibit EP toxicity have the reportable quantities listed in Table 302.4 for the contaminant on which the characteristic of EP toxicity is based. The reportable quantity applies to the waste itself, not merely to the toxic contaminant. If an unlisted hazardous waste exhibits EP toxicity on the basis of more than one contaminant, the reportable quantity for that waste shall be the lowest of the reportable quantities listed in Table 302.4 for those contaminants. If an unlisted hazardous waste exhibits the characteristic of EP toxicity and one or more of the other characteristics referenced in 40 CFR 302.4(b), the reportable quantity for that waste shall be the lowest of the applicable reportable quantities.

[51 FR 34547, Sept. 29, 1987, as amended at 54 FR 22538, May 24, 1989]

EFFECTIVE DATE NOTE: At 54 FR 22538, May 24, 1989, § 302.5 was amended by revising paragraph (a), effective July 24, 1989. For the convenience of the user, the superseded text follows.

§ 302.5 Determination of reportable quantities.

(a) *Listed hazardous substances.* The quantity listed in the column "Final RQ" for each substance in Table 302.4 is the reportable quantity for that substance.

* * * * *

§ 302.6 Notification requirements.

(a) Any person in charge of a vessel or an offshore or an onshore facility shall, as soon as he has knowledge of any release (other than a federally permitted release or application of a pesticide) of a hazardous substance from such vessel or facility in a quantity equal to or exceeding the reportable quantity determined by this part in any 24-hour period, immediately notify the National Response Center ((800) 424-8802; in Washington, D.C. (202) 426-2675).

(b) Releases of mixtures or solutions of

(1) Hazardous substances, except for radionuclides, are subject to this section's notification requirements only where a component hazardous substance of the mixture or solution is released in a quantity equal to or greater than its RQ.

(2) Radionuclides are subject to this section's notification requirements only in the following circumstances:

(i) If the identity and quantity (in curies) of each radionuclide in a released mixture or solution is known, the ratio between the quantity released (in curies) and the RQ for the radionuclide must be determined for each radionuclide. The only such releases subject to this section's notification requirements are those in which the sum of the ratios for the radionuclides in the mixture or solution released is equal to or greater than one.

(ii) If the identity of each radionuclide in a released mixture or solution is known but the quantity released (in curies) of one or more of the radionuclides is unknown, the only such releases subject to this section's notification requirements are those in which the total quantity (in curies) of the mixture or solution released is equal to or greater than the lowest RQ of any individual radionuclide in the mixture or solution.

(iii) If the identity of one or more radionuclides in a released mixture or solution is unknown (or if the identity of a radionuclide released by itself is unknown), the only such releases subject to this section's notification requirements are those in which the total quantity (in curies) released is equal to or greater than either one curie or the lowest RQ of any known individual radionuclide in the mixture or solution, whichever is lower.

(c) The following categories of releases are exempt from the notification requirements of this section: (1) Releases of those radionuclides that occur naturally in the soil from land holdings such as parks, golf courses, or other large tracts of land; (2) releases of radionuclides occurring naturally from the disturbance of land for purposes other than mining, such as for agricultural or construction activities; (3) releases of radionuclides from the dumping of coal and coal ash at utility and industrial facilities with coal-fired boilers; and (4) releases of radionuclides from coal and coal ash piles at utility and industrial facilities with coal-fired boilers.

(d) Except for releases of radionuclides, notification of the release of an RQ of solid particles of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, or zinc is not required if the mean diameter of the particles released is larger than 100 micrometers (0.004 inches).

(Approved by the Office of Management and Budget under control number 2115-0137)

[50 FR 13474, Apr. 4, 1985, as amended at 54 FR 22538, May 24, 1989]

Effective Date Note: At 54 FR 22538, May 24, 1989, § 302.6 was amended by redesignating paragraph (c) as (d), by revising paragraph (b) and the newly designated (d), and by adding a new paragraph (c), effective July 24, 1989. For the convenience of the user, the superseded text follows.

§ 302.6 Notification requirements.

* * * * *

(b) Releases of mixtures and solutions are subject to these notification requirements only where a component hazardous substance of the mixture or solution is released in a quantity equal to or greater than its reportable quantity.

(c) Notification of the release of an RQ of solid particles of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, or zinc is not required if the mean diameter of the particles released is larger than 100 micrometers (0.004 inches).

* * * * *

§ 302.7 Penalties.

(a) Any person—

(1) In charge of a vessel from which a hazardous substance is released, other than a federally permitted release, into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone,

(2) In charge of a vessel from which a hazardous substance is released, other than a federally permitted release, which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976), and who is otherwise subject to the jurisdiction of the United States at the time of the release, or

(3) In charge of a facility from which a hazardous substance is released, other than a federally permitted release, in a quantity equal to or greater than that reportable quantity determined under this part who fails to notify immediately the National Response Center as soon as he has knowledge of such release shall be subject to all of the sanctions, including criminal penalties, set forth in section 103 of the Act with respect to such failure to notify.

(b) Notification received pursuant to this section or information obtained by the exploitation of such notification shall not be used against any such person in any criminal case, except a prosecution for perjury or for giving a false statement.

(c) This section shall not apply to the application of a pesticide product registered under the Federal Insecticide, Fungicide, and Rodenticide Act or to the handling and storage of such a pesticide product by an agricultural producer.

PART 303—CITIZEN AWARDS FOR INFORMATION ON CRIMINAL VIOLATIONS UNDER SUPERFUND

Subpart A—General

Sec.
303.10 Purpose.
303.11 Definitions.
303.12 Criminal violations covered by this award authority.

Subpart B—Eligibility to File a Claim for Award and Determination of Eligibility and Amount of Award

303.20 Eligibility to file a claim for award.
303.21 Determination of eligibility and amount of award.

Subpart C—Criteria for Payment of Award

303.30 Criteria for payment of award.
303.31 Assurance of claimant confidentiality.
303.32 Pre-payment offers.
303.33 Filing a claim.

AUTHORITY: 42 U.S.C. 9609(d), Executive Order No. 12580.

SOURCE: 54 FR 26143, June 21, 1989, unless otherwise noted.

Subpart A—General

§ 303.10 Purpose.

This regulation implements the "citizen award" authority granted by Congress to the President in the 1986 Amendments to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), section 109(d). As authorized in the Superfund Amendments and Reauthorization Act of 1986 (SARA) section 109(c) and Executive Order No. 12580 (issued by the President on January 23, 1987), the Environmental Protection Agency is empowered to pay up to $10,000.00 from the Superfund to any individual who provides information leading to the arrest and conviction of any person for a violation subject to a criminal penalty under CERCLA as amended.

§ 303.11 Definitions.

(a) Arrest. Restraint of an arrestee's liberty or the equivalent through the service of judicial process compelling such a person to respond to a criminal accusation.

(b) Conviction. A judgment of guilt entered in U.S. District Court, upon a verdict rendered by the court or petit jury or by a plea of guilty, including a plea of *nolo contendere*.

(c) Individual. A natural person, not a corporation or other legal entity nor an association of persons.

§ 303.12 Criminal violations covered by this award authority.

(a) Failure to Give Required Notice of a Release of a Reportable Quantity of a Hazardous Substance, 42 U.S.C. 9603(a);

(b) Destruction or Concealment of Records Required under CERCLA to have been Retained, 42 U.S.C. 9603(d).

Subpart B—Eligibility to File a Claim for Award and Determination of Eligibility and Amount of Award

§ 303.20 Eligibility to file a claim for award.

(a) Any individual, except law enforcement officers and persons convicted in the case giving rise to the award claim and any persons identified in § 303.20(b) shall be eligible to file a claim for an award as provided for in § 303.33 of this subpart.

(b) No person who was an employee of or contractor for the United States Environmental Protection Agency at the time he or she came into possession of the information disclosed to other Agency officials (or is so employed at the time of disclosure), which information constitutes in whole or part the basis for an award claim, shall be eligible to file a claim for an award.

(c) To be eligible for an award, the informant must disclose the identity of person(s) [or other pertinent information that leads to the expeditious disclosure of the identity of said person(s)] criminally culpable for the violations set forth in § 303.12 of Subpart A. Disclosure of such pertinent information must be made to an employee, agent or representative of the United States Environmental Protection Agency.

§ 303.21 Determination of eligibility and amount of award.

The Agency's determinations as to eligibility and award amount shall constitute final Agency action as to either amount or eligibility. These determinations, consistent with the need to preserve from disclosure the identity of confidential informants (as noted in § 303.31) as well as to preserve from disclosure methods of Agency investigation, shall not be subject to administrative challenge by any person not making a claim to that award.

NOTE: It is the Environmental Protection Agency's view that such determinations also would not be subject to judicial challenge by such person.

Subpart C—Criteria for Payment of Award

§ 303.30 Criteria for payment of award.

Upon the filing of an eligible claim in accordance with the procedures as set forth in § 303.33, the Agency's Assistant Administrator for Enforcement and Compliance Monitoring, or his Deputy for Criminal Enforcement, in making the decision to grant an award, and if so, in what amount, shall consider all relevant criteria, giving such weight and importance to each separate criterion as appears warranted in his judgment alone. Relevant criteria include one or more of the following:

(a) Whether the claimant's information constituted the initial, unsolicited notice to the Government of the violation;

(b) Whether the Government would readily have obtained knowledge of the violation in a timely manner absent claimant's information;

(c) Importance of the case, egregiousness of the violation, potential for or existence of environmental harm;

(d) Concealment of a person criminally culpable or existence of an organized criminal conspiracy to conceal the offense(s) committed by the named defendant(s);

(e) Willingness of the claimant to assist the Government's prosecution of the offense(s), which assistance includes providing further information and grand jury testimony, participating in trial preparation, and trial testimony if consistent with the limits on claimant identity disclosure as set forth in § 303.31.

(f) Value of the claimant's assistance in comparison to that given by all other sources of information and evidence which led to arrest and conviction.

§ 303.31 Assurance of claimant confidentiality.

No person, except as authorized by the Agency's Office of Enforcement and Compliance Monitoring to have this knowledge, shall be given access to the identity of, or information that would lead to the identity of, a claimant who has requested anonymity prior to disclosing information to the Agency.

§ 303.32 Pre-payment offers.

Prior to the actual payment of an award, no employee of the United States Government, including any person purporting to act on behalf of the United States Environmental Protection Agency, is authorized by these regulations to make any promise, offer, or representation with respect to the Agency's grant of an award in exchange for information.

§ 303.33 Filing a claim.

(a) Any individual seeking an award under this regulation is required to file a claim for such an award with the Deputy Assistant Administrator for Criminal Enforcement not later than 45 days after the conviction of the person(s) involved in the prosecution in which the information was provided.

(b) The claim submission must provide, at a minimum, a summary of the information provided, the date the information was provided, and the name and title of the person to whom the information was provided.

(c) All claim submissions must be submitted to the Office of Criminal Enforcement Counsel (LE-134X), United States Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. The claim envelope should also specify whether the information was submitted under a request for anonymity and whether such request is still in effect. All such externally identified claims shall be handled in accordance with the Agency procedures for maintaining informant confidentiality, as referenced in § 303.31 of this subpart.

PART 304—ARBITRATION PROCEDURES FOR SMALL SUPERFUND COST RECOVERY CLAIMS

Subpart A—General

Sec.
304.10 Purpose.
304.11 Scope and applicability.
304.12 Definitions.

Subpart B—Jurisdiction of Arbitrator, Referral of Claims, and Appointment of Arbitrator

304.20 Jurisdiction of Arbitrator.
304.21 Referral of claims
304.22 Appointment of Arbitrator.
304.23 Disclosure and challenge procedures.
304.24 Intervention and withdrawal.
304.25 *Ex parte* communication.

Subpart C—Hearings Before the Arbitrator

304.30 Filing of pleadings.
304.31 Pre-hearing conference.
304.32 Arbitral hearing.
304.33 Arbitral decision and public comment.

Subpart D—Other Provisions

304.40 Effect and enforcement of final decision.
304.41 Administrative fees, expenses, and Arbitrator's fee.
304.42 Miscellaneous provisions.

AUTHORITY: 42 U.S.C. 9607(a) and 9622(h)(2), Executive Order No. 12580, 52 FR 2923 (January 29, 1987).

SOURCE: 54 FR 23179, May 30, 1989, unless otherwise noted.

EFFECTIVE DATE NOTE: At 54 FR 23179, May 30, 1989, Part 304 was added, effective August 28, 1989.

Subpart A—General

§ 304.10 Purpose.

This regulation establishes and governs procedures for the arbitration of EPA cost recovery claims arising under section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9607(a), as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499, 100 Stat. 1613 (1986) ("CERCLA"), pursuant to the authority granted EPA by section 122(h)(2) of CERCLA, 42 U.S.C. 9622(h)(2), and Executive Order No. 12580, 52 FR 2923 (January 29, 1987).

§ 304.11 Scope and applicability.

The procedures established by this regulation govern the arbitration of EPA claims for recovery, under section 107(a) of CERCLA, 42 U.S.C. 9607(a), of response costs incurred at or in connection with a facility by the United States pursuant to section 104 of CERCLA, 42 U.S.C. 9604. The procedures are applicable when:

(a) The total past and projected response costs for the facility concerned do not exceed $500,000, excluding interest; and

(b) The Administrator and one or more PRPs have submitted a joint request for arbitration pursuant to § 304.21 of this part.

§ 304.12 Definitions.

Terms not defined in this section have the meaning given by section 101 of CERCLA, 42 U.S.C. 9601, or the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300. All time deadlines in this part are specified in calendar days and shall be computed in the manner described in Rule 6(a) of the Federal Rules of Civil Procedure.

Except when otherwise specified, the following terms are defined for purposes of this part as follows:

(a) "CERCLA" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. 9601, *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99-499, 100 Stat. 1613 (1986).

(b) "Administrator" means the EPA Administrator or his designee.

(c) "Arbitrator" means the person appointed in accordance with § 304.22

of this part and governed by the provisions of this part.

(d) "Association" means the organization offering arbitration services selected by EPA to conduct arbitrations pursuant to this part.

(e) "Claim" means the amount sought by EPA as recovery of response costs incurred and to be incurred by the United States at a facility, which does not exceed $500,000, excluding interest.

(f) "*Ex parte* communication" means any communication, written or oral, relating to the merits of the arbitral proceeding, between the Arbitrator and any interested person, which was not originally filed or stated in the administrative record of the proceeding. Such communication is not "*ex parte* communication" if all parties to the proceeding have received prior written notice of the proposed communication and have been given the opportunity to be present and to participate therein.

(g) "Interested person" means the Administrator, any EPA employee, any party to the proceeding, any potentially responsible party associated with the facility concerned, any person who filed written comments in the proceeding, any participant or intervenor in the proceeding, all officers, directors, employees, consultants, and agents of any party, and any attorney of record for any of the foregoing persons.

(h) "National Contingency Plan" or "NCP" means the National Oil and Hazardous Substances Pollution Contingency Plan, developed under section 311(c)(2) of the Federal Water Pollution Control Act, 33 U.S.C. 1251, *et seq.*, as amended, revised periodically pursuant to section 105 of CERCLA, 42 U.S.C. 9605, and published at 40 CFR Part 300.

(i) "National Panel of Environmental Arbitrators" or "Panel" means a panel of environmental arbitrators selected and maintained by the Association to arbitrate cost recovery claims under this part.

(j) "Participating PRP" is any potentially responsible party who has agreed, pursuant to § 304.21 of this part, to submit one or more issues arising in an EPA claim for resolution pursuant to the procedures established by this part.

(k) "Party" means EPA and any person who has agreed, pursuant to § 304.21 of this part, to submit one or more issues arising in an EPA claim for resolution pursuant to the procedures established by this part, and any person who has been granted leave to intervene pursuant to § 304.24(a) of this part.

(l) "Persons" means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State, or any interstate body.

(m) "Potentially responsible party" or "PRP" means any person who may be liable pursuant to section 107(a) of CERCLA, 42 U.S.C. 9607(a), for response costs incurred and to be incurred by the United States not inconsistent with NCP.

(n) "Response action" means remove, removal, remedy and remedial action, as those terms are defined by section 101 of CERCLA, 42 U.S.C. 9601, including enforcement activities related thereto.

(o) "Response costs" means all costs of removal or remedial action incurred and to be incurred by the United States at a facility pursuant to section 104 of CERCLA, 42 U.S.C. 9604, including, but not limited to, all costs of investigation and information gathering, planning and implementing a response action, administration, enforcement, litigation, interest and indirect costs.

Subpart B—Jurisdiction of Arbitrator, Referral of Claims, and Appointment of Arbitrator

§ 304.20 Jurisdiction of Arbitrator.

(a) In accordance with the procedures established by this part, the Arbitrator is authorized to arbitrate one or more issues arising in an EPA claim when:

(1) The total past and projected response costs for the facility concerned do not exceed $500,000, excluding interest; and

(2) The Administrator and one or more PRPs have submitted a joint request for arbitration pursuant to § 304.21 of this part.

(b)(1) If the total past and projected response costs for the facility concerned increase to a dollar amount in excess of $500,000, excluding interest, prior to the rendering of the final decision pursuant to § 304.33 of this part, the parties may mutually agree to continue the proceeding as non-binding arbitration pursuant to the procedures established by this part, except that §§ 304.33(e) and 304.40 of this part shall not apply.

(2) If all of the parties agree to continue the proceeding as non-binding arbitration, the proposed decision rendered by the Arbitrator pursuant to § 304.33 of this part shall not be binding upon the parties, unless all of the parties agree to adopt the proposed decision as an administrative settlement pursuant to section 122(h)(1) of CERCLA, 42 U.S.C. 9622(h)(1). Any administrative settlement agreed upon in this manner shall be subject to the prior written approval of the Attorney General (or his designee) pursuant to section 122(h)(1) of CERCLA and shall be subject to public comment pursuant to section 122(i) of CERCLA, 42 U.S.C. 9622(i).

(3) If the parties do not agree to continue the proceeding as non-binding arbitration, or if the administrative settlement agreed upon is not approved by the Attorney General (or his designee), or if EPA withdraws or withholds consent from the administrative settlement as a result of public comment, EPA shall withdraw from the proceeding and the Association shall assess or refund, as appropriate, any administrative fees, expenses, or Arbitrator's fees.

(c) The Arbitrator's authority, as defined by paragraphs (d) and (e) of this section, to determine issues arising in EPA's claim is limited only to the issues submitted for resolution by the parties in the joint request for arbitration pursuant to § 304.21 of this part. Any issues arising in EPA's claim that are not submitted for resolution shall be deemed to be not in dispute and shall not be raised in any action seeking enforcement of the decision for the purpose of overturning or otherwise challenging the final decision, except as provided in § 304.40(c) of this part.

(d)(1) If the issue of liability of any participating PRP has been submitted for resolution, the Arbitrator shall determine whether the participating PRP is liable pursuant to section 107(a) of CERCLA, 42 U.S.C. 9607(a), subject only to the defenses specifically enumerated in section 107(b) of CERCLA, 42 U.S.C. 9607(b).

(2) If the issue of the dollar amount of response costs recoverable by EPA has been submitted for resolution, the Arbitrator shall determine, pursuant to paragraph (e) of this section, the dollar amount of response costs recoverable by EPA pursuant to section 107(a) of CERCLA, 42 U.S.C. 9607(a), and shall award the total amount of such costs to EPA.

(3) Unless the Arbitrator finds that the actual or threatened harm at the facility is divisible, any participating PRP whom the Arbitrator determines to be liable shall be jointly and severally liable for the total amount of response costs awarded to EPA. If the Arbitrator finds that the actual or threatened harm is divisible, the Arbitrator shall allocate liability for payment of EPA's award among the participating PRPs based on the portion of the actual or threatened harm attributable to each participating PRP.

(4) Notwithstanding the indivisibility of the actual or threatened harm, and without waiving the general applicability of the joint and several liability standard, as an alternative to paragraph (d)(3) of this section, the parties may request the Arbitrator to allocate responsibility for payment of response costs awarded to EPA among the participating PRPs whom the Arbitrator determines to be liable. Any such request shall be made in the joint request for arbitration pursuant to § 304.21 of this part. If such a request is made, the provisions of paragraphs (d)(4)(i), (d)(4)(ii), and (d)(4)(iii) of this section shall apply.

(i) The joint request for arbitration may specify the factors to be applied by the arbitrator when allocating among the participating PRPs responsibility for payment of the response costs awarded to EPA. If the joint request does not specify such factors, the Arbitrator shall base the allocation on such factors as the arbitrator considers relevant, in his or her sole discretion, such as volume, toxicity, and mobility of the hazardous substances contributed to the facility by each participating PRP, ability to pay, and inequities and aggravating factors.

(ii) The joint request for arbitration may specify that the Arbitrator may allocate among the participating PRPs less than all response costs awarded to EPA. If this is not specified, the Arbitrator shall allocate among the participating PRPs 100% of the response costs awarded to EPA.

(iii) The burden of establishing the appropriate allocation of responsibility for payment of the response costs awarded to EPA shall rest entirely with the participating PRPs.

(5) The parties may request that the Arbitrator perform an allocation even if the issue of the liability of the participating PRPs is not submitted for resolution in the joint request for arbitration. Such a request for allocation shall be made in the joint request for arbitration pursuant to § 304.21 of this part. If such a request is made, the provisions of paragraphs (d)(4)(i), (d)(4)(ii), and (d)(4)(iii) of this section shall apply.

(e)(1) If any issue concerning the adequacy of EPA's response action has been submitted for resolution or arises during the Arbitrator's determination of the dollar amount of response costs recoverable by EPA, the Arbitrator shall uphold EPA's selection of the response action, unless any participating PRP can establish that the selection was inconsistent with the NCP. The Arbitrator's review of the adequacy of any response action taken by EPA shall be based upon the documents which formed the basis for the selection of the response action.

(2) If the Arbitrator upholds EPA's selection of the response action in full, the Arbitrator shall award EPA all response costs incurred and to be incurred in connection with the response action, unless any participating PRP can establish that all or part of such costs were:

(i) Not actually incurred or to be incurred; or

(ii) Not actually incurred or to be incurred in connection with the response action; or

(iii) Clearly excessive, taking into account the circumstances of the response action and relative to acceptable government procurement and contracting practices in light of the circumstances of the response action.

(3) If the Arbitrator upholds EPA's selection of the response action only in part, the Arbitrator shall award EPA only those response costs incurred and to be incurred in connection with the portions of the response action that were upheld, unless any participating PRP can establish that all or part of such response costs were:

(i) Not actually incurred or to be incurred; or

(ii) Not actually incurred or to be incurred in connection with the portions of the response action that were upheld; or

(iii) Clearly excessive, taking into account the circumstances of the response action and relative to acceptable government procurement and contracting practices in light of the circumstances of the response action.

(4) The standard of review to be applied by the Arbitrator under paragraphs (e)(1), (e)(2), and (e)(3) of this section is arbitrary and capricious or otherwise not in accordance with law.

(5) In reviewing any procedural errors alleged by any party, the Arbitrator may disallow response costs only if the errors were so serious and related to matters of such central relevance that the response action would have been significantly changed had such errors not been made.

§ 304.21 Referral of claims.

(a) If EPA believes that a claim is an appropriate candidate for arbitration, EPA will notify all identified PRPs for the facility concerned and provide such PRPs with an opportunity to discuss referral of one or more issues arising in the claim for resolution pursuant to the procedures established by this part. Alternatively, one or more PRPs at a facility may propose to EPA use of arbitration, after receipt of a demand by EPA for payment of a claim, but prior to commencement of civil litigation of the claim. Where practicable, before an agreement to refer a claim for arbitration is made final under this alternative, either the PRPs or EPA shall notify the other PRPs at the facility of the potential use of arbitration.

(b)(1) The Administrator and one or more PRPs associated with a facility may submit to the Association a joint request for arbitration of one or more issues arising in an EPA claim concerning the facility. The joint request shall be signed by all of the parties and shall include:

(i) A brief description of the facility, the EPA response action taken at the facility, the EPA claim, and the parties;

(ii) A statement of the issues arising in the claim that are being submitted by the parties for resolution by arbitration;

(iii) A statement that the parties consent to resolution of the issues jointly submitted pursuant to the procedures established by this part by an Arbitrator appointed pursuant to § 304.22 of this part;

(iv) A statement that the parties agree to be bound by the final decision on all issues jointly submitted by the parties for resolution and to pay any award made in the final decision, subject to the right to challenge the final decision solely on the grounds and in the manner prescribed by § 304.40(c) of this part;

(v) A statement that the parties agree that the award made in the final decision may be enforced pursuant to § 304.40(c) of this part;

(vi) A statement that the parties agree that the final decision shall be binding only with respect to the response costs at issue in the claim submitted for arbitration;

(vii) A statement that the parties agree that the statute of limitations governing the EPA claim submitted shall be extended for a time period equal to the number of days from the date the joint request for arbitration is submitted to the Association to the date of resolution of any enforcement action relating to the final decision; and

(viii) A statement that each signatory to the joint request is authorized to enter into the arbitration and to bind legally the party represented by him or her to the terms of the joint request.

(2) The joint request shall also include the name, address and telephone number of each party, and, if a party is represented by an attorney, the attorney's name, address and telephone number. A party changing any of this information must promptly communicate the change in writing to the Association and all other parties. A party who fails to furnish such information or any changes thereto is deemed to have waived his or her right to notice and service under this part until such time as the party furnishes the missing information.

(c) Any party may move to modify the joint request for arbitration to include one or more additional issues arising in the referred claim. To be effective, any such modification must be signed by the Arbitrator and all other parties. The joint request for arbitration may also be modified to add one or more additional parties, if such intervention is permitted by § 304.24(a) of this part. To be effective, any such modification must be signed by the Arbitrator, the intervening party or parties, and all other parties.

(d) The statute of limitations governing the EPA claim submitted for arbitration shall be extended for a time period equal to the number of days from the date the joint request for arbitration is submitted to the Association to the date of resolution of any enforcement action relating to the final decision.

(e) Prior to the selection of the Association, the Administrator and one or more PRPs associated with a facility may agree to submit one or more issues arising in an EPA claim for resolution by arbitration. Any such agreement shall be contained in a joint request for arbitration which meets all requirements of paragraph (b) of this section. In any such arbitration, the arbitrator shall be selected pursuant to § 304.22(e) of this part, and payment of all costs associated with the arbitration shall be made pursuant to

§ 304.41(e) of this Part. Arbitrations agreed upon pursuant to this paragraph shall be governed by the procedures established by this part, except for those procedures which pertain specifically to the duties of the Association. All duties of the Association shall be performed in a manner agreed upon by all of the parties.

§ 304.22 Appointment of Arbitrator.

(a) The Association shall establish and maintain a National Panel of Environmental Arbitrators.

(b) Within ten days of the filing of the joint request for arbitration, the Association shall identify and submit simultaneously to all parties an identical list of ten persons chosen from the National Panel of Environmental Arbitrators, whom the Association believes will not be subject to disqualification because of circumstances likely to affect impartiality pursuant to § 304.23 of this part. Each party shall have ten days from the date of receipt of the list to identify any persons objected to, to rank the remaining persons in the order of preference, and to return the list to the Association. If a party does not return the list within the time specified, all persons on the list are deemed acceptable to that party. From among the persons whom the parties have indicated as acceptable, and, in accordance with the designated order of mutual preference, if any, the Association shall invite an Arbitrator to serve. If the parties fail to mutually agree upon any of the persons named, or if the invited Arbitrator is unable to serve, or if for any other reason the appointment cannot be made from the submitted lists, the Association shall make the appointment from among the other members of the Panel. In no event shall appointment of the Arbitrator by the Association take longer than thirty days from the filing of the joint request for arbitration.

(c) Within seven days of the appointment of the Arbitrator, the Association shall mail to each of the parties notice of the identity of the Arbitrator and the date of the appointment, together with a copy of these rules. The Arbitrator shall, within five days of his or her appointment, file a signed acceptance of the case with the Association. The Association shall, within seven days of receipt of the Arbitrator's acceptance, mail notice of such acceptance to the parties.

(d) If any appointed Arbitrator should resign, die, withdraw, be disqualified or otherwise be unable to perform the duties of the office, the Association may, on satisfactory proof declare the office vacant. Vacancies shall be filled in accordance with the applicable provisions of this section and the matter shall be resumed.

(e) If the Administrator and one or more PRPs associated with a facility enter into a joint request for arbitration prior to the selection of the Association (*see* § 304.21(e) of this part) the Administrator and the participating PRPs shall reach mutual agreement upon the selection and appointment of an Arbitrator on a case-by-case basis, and the Administrator shall obtain the services of that person using appropriate procurement procedures. Any person appointed as an Arbitrator pursuant to this paragraph shall make disclosures to the parties pursuant to § 304.23 of this part, shall resolve the issues submitted for resolution pursuant to the jurisdiction and authority granted to the Arbitrator in § 304.20 of this part, and shall otherwise conduct the arbitral proceeding pursuant to the procedures established by this part.

§ 304.23 Disclosure and challenge procedures.

(a) A person appointed as an Arbitrator under § 304.22 of this part shall, within five days of receipt of his or her notice of appointment, disclose to the Association any circumstances likely to affect impartiality, including any bias or any financial or personal interest in the result of the arbitration, or any past or present relationship with the parties or their counsel, or any past or present relationship with any PRP to which the claim may relate.

(b) Upon receipt of such information from an appointed Arbitrator or other source, the Association shall, within two days of receipt, communicate such information to the parties. Such communication may be made orally or in writing, but if made orally, shall be confirmed in writing.

(c) If any party wishes to request disqualification of an Arbitrator, such party shall notify the Association and the other parties of such request and the basis therefor within seven days of receipt of the information on which such request is based.

(d) The Association shall make a determination on any request for disqualification of an Arbitrator within seven days after the Association receives any such request, and shall notify the parties in writing of such determination. This determination shall be within the sole discretion of the Association, and its decision shall be final.

§ 304.24 Intervention and withdrawal.

(a) (1) No later than thirty days prior to the pre-hearing conference (*see* § 304.31 of this part), any PRP associated with the facility which is the subject of the referred claim may move to intervene in the arbitral proceeding for the purpose of having one or more issues relating to his or her responsibility for payment of the referred claim resolved.

(2) If the Arbitrator has been appointed, a motion to intervene shall be filed with the Arbitrator and a copy shall be served upon all parties. If the Arbitrator has not yet been appointed, a motion to intervene shall be submitted to the Association and a copy shall be served upon all parties.

(3) Any such motion to intervene may be granted only upon the written approval of the Arbitrator and all of the parties in the form of a modification to the joint request for arbitration pursuant to § 304.21(c) of this part. by signing such a modification, the intervening party consents to be bound by the terms of the joint request for arbitration submitted pursuant to § 304.21(b) of this part and any modifications previously made thereto pursuant to § 304.21(c) of this part, and consents to be bound by such revisions to the time limits for the filing of pleadings as the Arbitrator may make to prevent delaying the prehearing conference.

(b) Any party may move to withdraw from the arbitral proceeding within thirty days after receipt of the notice of appointment of the Arbitrator (*see* § 304.22 of this part). The Arbitrator may approve such withdrawal, without prejudice to the moving party, and shall assess such administrative fees and expenses (*see* § 304.41 of this part) against the withdrawing party as the Arbitrator deems appropriate. No party may withdraw from the arbitral proceedings after this thirty-day period, except that EPA may withdraw from the proceeding in accordance with § 304.20(b)(3) or § 304.33(e) of this part.

§ 304.25 Ex parte communication.

(a) No interested person shall make or knowingly cause to be made to the Arbitrator an *ex parte* communication.

(b) The Arbitrator shall not make or knowingly cause to be made to any interested person an *ex parte* communication.

(c) The Association may remove the Arbitrator in any proceeding in which it is demonstrated to the Association's satisfaction that the Arbitrator has engaged in prohibited *ex parte* communication to the prejudice of any party. If the Arbitrator is removed, the procedures in § 304.22(d) of this part shall apply.

(d) Whenever an *ex parte* communication in violation of this section is received by or made known to the Arbitrator, the Arbitrator shall immediately notify in writing all parties to the proceeding of the circumstances and substance of the communication and may require the party who made the communication or caused the communication to be made, or the party whose representative made the communication or caused the communication to be made, to show cause why that party's arguments or claim should not be denied, disregarded, or otherwise adversely affected on account of such violation.

(e) The prohibitions of this section apply upon appointment of the Arbitrator and terminate on the date of the final decision.

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Subpart C—Hearings Before the Arbitrator

§ 304.30 Filing of pleadings.

(a) Discovery shall be in accordance with this section and § 304.31 of this part.

(b) Within thirty days after receipt of the notice of appointment of the Arbitrator (*see* § 304.22 of this part), EPA shall submit to the Arbitrator two copies of a written statement and shall serve a copy of the written statement upon all other parties. The written statement shall in all cases include the information requested in paragraphs (b)(1), (b)(6), and (b)(7) of this section, shall include the information requested in paragraph (b)(2) of this section if the issue of liability of any participating PRP has been submitted for resolution, shall include the information requested in paragraph (b)(3) of this section if any issue concerning the adequacy of EPA's response action has been submitted for resolution or may arise during the Arbitrator's determination of the dollar amount of response costs recoverable by EPA, shall include the information requested in paragraph (b)(4) of this section if the issue of the dollar amount of response costs recoverable by EPA has been submitted for resolution, and shall include the information requested in paragraph (b)(5) of this section if any issue concerning allocation of liability for payment of EPA's award has been submitted for resolution.

(1) A statement of facts, including a description of the facility, the EPA response action taken at the facility, the response costs incurred and to be incurred by the United States in connection with the response action taken at the facility, and the parties;

(2) A description of the evidence in support of the following four elements of liability of the participating PRP(s) whose liability pursuant to section 107(a) of CERCLA, 42 U.S.C. 9607(a), is at issue, and any supporting documentation therefor:

(i) The site at which EPA's response action was taken is a "facility" as defined by section 101(9) of CERCLA, 42 U.S.C. 9601(9);

(ii) There was a "release or threat of release" within the meaning of sections 101(22) and 104(a) of CERCLA, 42 U.S.C. 9601(22) and 9604(a), of a "hazardous substance" as defined by section 101(14) of CERCLA, 42 U.S.C 9601(14), at the facility at which EPA's response action was taken;

(iii) The release or threat of release caused the United States to incur "response costs" as defined in § 304.12(o) of this part; and

(iv) The participating PRP is in one of the categories of liable parties in section 107(a) of CERCLA, 42 U.S.C. 9607(a);

(3) An index of any documents which formed the basis for the selection of the response action taken at the facility (all indexed documents shall be made available to any participating PRP);

(4) A summary, broken down by category, of all response costs incurred and to be incurred by the United States in connection with the response action taken by EPA at the facility (supporting documentation for the summary shall be made available to any participating PRP pursuant to the procedures described in Rule 1006 of the Federal Rules of Evidence);

(5) To the extent such information is available, the names and addresses of all identified PRPs for the facility, the volume and nature of the substances contributed to the facility by each identified PRP, and a ranking by volume of the substances contributed to the facility;

(6) A recommended location for the pre-hearing conference and the arbitral hearing; and

(7) Any other statement or documentation that EPA deems necessary to support its claim.

(c) Within thirty days after receipt of EPA's written statement, each participating PRP shall submit to the Arbitrator two copies of an answer and shall serve a copy of the answer upon all other parties. The answer shall in all cases include the information requested in paragraphs (c)(1), (c)(6), and (c)(7) of this section, shall include the information requested in paragraph (c)(2) of this section if the issue of the liability of the answering participating PRP has been submitted for resolution, shall include the information requested in paragraph (c)(3) of this section if any issue concerning the adequacy of EPA's response action has been submitted for resolution or may arise during the Arbitrator's determination of the dollar amount of response costs recoverable by EPA, shall include the information requested in paragraph (c)(4) of this section if the issue of the dollar amount of response costs recoverable by EPA has been submitted for resolution, and shall include the information requested in paragraph (c)(5) of this section if any issue concerning the allocation of responsibility for payment of EPA's award has been submitted for resolution:

(1) Any objections to the statement of facts in EPA's written statement, and, if so, a counterstatement of facts;

(2) Any objections to EPA's position on the liability of the answering participating PRP pursuant to section 107(a) of CERCLA, 42 U.S.C. 9607(a), a description of the evidence in support of the defenses to liability of the answering participating PRP which are specifically enumerated in section 107(b) of CERCLA, 42 U.S.C. 9607(b) (*i.e.*, that the release or threat of release of a hazardous substance at the facility was caused solely by an act of God, an act of war, an act or omission of an unrelated third party, or any combination thereof), and any supporting documentation thereof;

(3) Any objections to the response action taken by EPA at the facility based upon any documents which formed the basis for the selection of the response action;

(4) Any objections to EPA's summary and supporting documentation for all response costs incurred and to be incurred by the United States in connection with the response action taken by EPA at the facility;

(5) Any documentation which the participating PRP deems relevant to the allocation of responsibility for payment of EPA's award.

(6) A recommended location for the pre-hearing conference and the arbitral hearing; and

(7) Any other statement or documentation that the participating PRP deems necessary to support its claim.

(d) EPA may file a response to any participating PRP's answer within twenty days of receipt of such answer. Two copies of any such response shall be served upon the Arbitrator, and a copy of any such response shall be served upon all parties.

(e) If EPA files a response, any participating PRP may file a reply thereto within ten days after receipt of such response. Two copies of any such reply shall be served upon the Arbitrator, and a copy of any such reply shall be served upon all parties.

§ 304.31 Pre-hearing conference.

(a) The Arbitrator and the parties shall exchange witness lists (with a brief summary of the testimony of each witness) and any exhibits or documents that the parties have not submitted in their pleadings pursuant to § 304.30 of this part, within 110 days after the appointment of the Arbitrator (*see* § 304.22 of this part) or within 10 days prior to the pre-hearing conference, whichever is earlier.

(b) The Arbitrator shall select the location, date, and time for the pre-hearing conference, giving due consideration to any recommendations by the parties.

(c) The pre-hearing conference shall be held within one hundred twenty days after the appointment of the Arbitrator (*see* § 304.22 of this part).

(d) The Arbitrator shall mail to each party notice of the pre-hearing conference not later than twenty days in advance of such conference, unless the parties by mutual agreement waive such notice.

(e) Any party may be represented by counsel at the pre-hearing conference. A party who intends to be so represented shall notify the other parties and the Arbitrator of the name, address and telephone number of counsel at least three days prior to the date set for the pre-hearing conference. When an attorney has initiated the arbitration by signing the joint request for arbitration on behalf of a party, or when an attorney has filed a pleading on behalf of a party, such notice is deemed to have been given.

(f) The pre-hearing conference may proceed in the absence of any party who, after due notice, fails to appear.

(g) (1) At the pre-hearing conference, the Arbitrator and the parties shall exchange witness statements, a stipulation of uncontested facts, a statement of disputed issues, and any other documents, including written direct testimony, that will assist in prompt resolution of the dispute and avoid unnecessary proof.

(2) The Arbitrator and the parties shall consider the settlement of all or part of the claim. The Arbitrator may encourage further settlement discussions among the parties. Any settlement reached may be set forth in a proposed decision in accordance with § 304.33 of this part. If such a settlement is not set forth in a proposed decision, the settlement shall be treated as an administrative settlement pursuant to section 122(h)(1) of CERCLA, 42 U.S.C. 9622(h)(1), and shall be subject to public comment pursuant to section 122(i) of CERCLA, 42 U.S.C. 9622(i).

§ 304.32 Arbitral hearing.

(a) The Arbitrator may, in his sole discretion, schedule a hearing with the parties on one or more of the disputed issues identified in the statement of disputed issues pursuant to § 304.31(g)(1) of this part.

(b) The Arbitrator shall select the location, date, and time for the arbitral hearing, giving due consideration to any recommendations by the parties.

(c) The hearing shall commence within forty-five days after the pre-hearing conference (*see* § 304.31 of this part). The Arbitrator may, upon a showing by the parties that settlement is likely, extend the date for the hearing for up to thirty additional days, if further settlement discussions have been held pursuant to §304.31(g)(2) of this part.

(d) The Arbitrator shall mail to each party notice of the hearing not later than twenty days in advance of the hearing, unless the parties by mutual agreement waive such notice. Such notice shall include a statement of the disputed issues to be addressed at the hearing. The Arbitrator need not mail a second notice to the parties if the date for the hearing is extended pursuant to paragraph (c) of this section.

(e) Any party may be represented by counsel at the hearing. A party who intends to be so represented shall notify the other parties and the Arbitrator of the name, address and telephone number of counsel at least three days prior to the date set for the hearing. When an attorney has initiated the arbitration by signing the joint request on behalf of a party, or when an attorney has filed a pleading on behalf of a party, or when notice has been given pursuant to § 304.31(e) of this part, such notice is deemed to have been given.

(f) The Arbitrator shall make the necessary arrangements for the making of a true and accurate record of the arbitral hearing.

(g) The Arbitrator shall make the necessary arrangements for the services of an interpreter upon the request of one or more of the parties.

(h) The Arbitrator may take adjournments upon the request of any party or upon the Arbitrator's own initiative and shall take such adjournment when all of the parties agree thereto.

(i) The Arbitrator shall administer oaths to all witnesses before they testify at the arbitral hearing.

(j) (1) A hearing shall be opened by the recording of the location, date, and time of the hearing, the presence of the Arbitrator and the parties, and counsel if any, and by the Arbitrator's acknowledgment for the record of all pleadings and all other documents that have been filed by the parties.

(2) The hearing shall be conducted in accordance with the Arbitrator's jurisdiction as defined by § 304.20 of this part.

(3) The Arbitrator may, at any time, require oral statements clarifying the issues to be addressed at the hearing.

(4) The Arbitrator may require the parties to present witnesses for questioning by the Arbitrator and for direct and cross-examination by the parties on any of the disputed issues, except for any disputed issues concerning the selection or adequacy of the response action, which shall be governed by paragraph (j)(6) of this section.

(5) The Arbitrator shall define the scope of oral testimony. A party may

present oral direct testimony only upon a showing of good cause why such testimony could not have been submitted in written form, or upon consent of all of the parties.

(6) Notwithstanding §§ 304.20(e)(1) and 304.20(e)(4) of this part, the Arbitrator may permit any party to supplement the documents which formed the basis for the selection of the response action (with additional documents, affidavits, or oral testimony), if any party demonstrates that supplementation is appropriate based upon applicable principles of administrative law.

(k) (1) Except as provided in paragraph (j)(6) of this section, exhibits and other documentary evidence not included in a party's pleadings, not exchanged prior to the pre-hearing conference pursuant to § 304.31(a) of this part, or not exchanged at the pre-hearing conference pursuant to § 304.31(g)(1) of this part, may be introduced at the hearing only upon a showing of good cause by the moving party or upon consent of all of the parties.

(2) Except as provided in paragraph (j)(6) of this section, witnesses not identified in a party's witness list may be presented at the hearing only upon a showing of good cause by the moving party or upon consent of all of the parties.

(3) The Arbitrator shall be the judge of the relevance and materiality of the evidence offered during the proceeding and of the applicability of legal privileges. Conformity to legal rules of evidence shall not be required.

(4) The Arbitrator may make such orders as may be necessary for *in camera* consideration of evidence for reasons of business confidentiality as defined by 40 CFR 2.201(e) and as consistent with section 104(e)(7) of CERCLA, 42 U.S.C. 9604(e)(7).

(l) The hearing may proceed in the absence of any party who, after due notice, fails to appear or fails to obtain an adjournment. If a party, after due notice, fails to appear or fails to obtain an adjournment, such party will be deemed to have waived the right to be present at the hearing.

(m) After all disputed issues have been heard by the Arbitrator, the Arbitrator may permit the parties to make closing statements, after which the Arbitrator shall declare the hearing closed.

(n) The hearing shall be completed within two weeks, unless the Arbitrator extends the hearing for good cause.

(o) The Arbitrator may permit the parties to submit proposed findings of fact, rulings, or orders within ten days after receipt of the hearing transcript or such longer time upon a finding of good cause.

(p) The parties may provide, by written agreement, for the waiver of the hearing.

§ 304.33 Arbitral decision and public comment.

(a) The Arbitrator shall render a proposed decision within forty-five days after the hearing is closed, or within forty-five days after the pre-hearing conference if no hearing is held, unless the parties have settled the dispute prior to the rendering of the proposed decision.

(b) (1) The proposed decision shall be in writing and shall be signed by the Arbitrator. It shall be limited in accordance with the Arbitrator's jurisdiction as defined by § 304.20 of this part, and shall, if such issues have been jointly submitted by the parties for resolution, contain the Arbitrator's determination of:

(i) Which participating PRPs, if any, are liable pursuant to section 107(a) of CERCLA, 42 U.S.C. 9607(a);

(ii) The dollar amount of response costs, if any, to be awarded to EPA; and

(iii) The allocation of responsibility for payment of EPA's award, if any, among the participating PRPs.

(2) The proposed decision shall also assess arbitration fees and expenses (*see* § 304.41 of this part) in favor of any party, or combination of parties, and, in the event any administrative fees or expenses are due the Association, in favor of the Association.

(c) If the parties settle their dispute during the course of the proceeding, the Arbitrator may, upon the parties' request, set forth in the terms of the agreed settlement in a proposed decision. Except as provided in § 304.20(b) of this part, a proposed decision which embodies an agreed settlement shall be subject to all applicable provisions of this part, including, but not limited to, paragraph (e) of this section and § 304.40 of this part.

(d) The parties shall accept as legal delivery of the proposed decision the placing in the United States mail of a true copy of the proposed decision, sent by certified mail, return receipt requested, addressed to each party's last known address or each party's attorney's last known address, or by personal service.

(e) (1) Pursuant to section 122(i) of CERCLA, 42 U.S.C. 9622(i), notice of the proposed decision shall be published promptly by EPA in the FEDERAL REGISTER. Such notice shall include the name and location of the facility concerned, the names of the parties to the proceeding, and a brief summary of the proposed decision, and shall provide persons who are not parties to the proceeding a thirty-day period in which to file written comments relating to the proposed decision. Any filed comments shall be made available to the participating PRPs and to the public. The participating PRPs shall have ten days from the close of the public comment period in which to submit to EPA in writing their views on the merits of any comments filed. EPA shall consider any comments filed, and shall, within thirty days after the close of the ten-day period during which the participating PRPs may submit their views on any comments filed, provide written notice to the Arbitrator and the participating PRPs. The written notice shall be made available to the public and shall include:

(i) A summary of any comments filed;

(ii) Responses to any comments filed;

(iii) A discussion of whether any comments filed disclose to EPA facts or considerations which indicate the proposed decision is inappropriate, improper or inadequate; and

(iv) EPA's determination as to whether modification of the proposed decision or withdrawal from the arbitral proceeding is necessary based upon such comments.

(2) If EPA's written notice does not state that modification or withdrawal is necessary based upon public comments, then the proposed decision shall become final thirty days after the date of issuance of EPA's written notice. If EPA's written notice states that modification or withdrawal is necessary, the parties shall have thirty days from the date of issuance of EPA's written notice to modify the proposed decision so that it is no longer inappropriate, improper or inadequate and to set forth the proposed decision, as modified, in an agreed settlement. If an agreed settlement is reached, such agreed settlement shall be the final decision. If the parties do not modify the proposed decision in an agreed settlement within thirty days, the proposed decision shall be null and void and of no legal effect, EPA shall withdraw from the proceeding, and the Arbitrator shall assess such administrative fees and expenses (*see* § 304.41 of this part) against the parties as the Arbitrator deems appropriate.

(f) Payment of EPA's award, if any, and any fees or expenses due pursuant to the final decision, shall be made within thirty days after the date of the final decision.

(g) The Arbitrator shall, upon written request of any party, furnish to such party certified facsimiles of all papers in the Arbitrator's possession that may be required in judicial proceedings relating to the arbitration pursuant to § 304.40 of this part.

Subpart D—Other Provisions

§ 304.40 Effect and enforcement of final decision.

(a) Pursuant to section 122(h)(4) of CERCLA, 42 U.S.C. 9622(h)(4), any participating PRP who has resolved his or her liability for an EPA claim through a final decision reached pursuant to the procedures established by this part shall not be liable for claims for contributions regarding matters addressed by the final decision.

(b) The final decision shall be binding and conclusive upon the parties as to issues that were jointly submitted by the parties for resolution and addressed in the decision.

(c) (1) If any award made in the final decision is not paid within the time required by § 304.33(f) of this part, the final decision may be enforced as a settlement under section 122(h) of CERCLA, 42 U.S.C. 9622(h), by the Attorney General on behalf of EPA in any appropriate Federal district court pursuant to section 122(h)(3) of CERCLA, 42 U.S.C. 9622(h)(3). Pursuant to section 122(h)(3) of CERCLA, the terms of the final decision shall not be subject to review in any such action.

(2) In any such enforcement action initiated by the United States, the final decision may be challenged by any party if:

(i) It was achieved through fraud, misconduct, or partiality on the part of the Arbitrator;

(ii) It was achieved through fraud or misconduct by one of the parties affecting the result;

(iii) The Arbitrator exceeded his or her jurisdiction under § 304.20 of this part or failed to decide the claim within the bounds of his or her authority under this part; or

(iv) It violates public policy.

(3) Except as necessary to show such fraud, misconduct, partiality, excess of jurisdiction or authority, or violation of public policy, in any such enforcement action, a party may not raise, for the purpose of overturning or otherwise challenging the final decision, issues arising in the claim that were not submitted for resolution by arbitration.

(d) Except as provided in paragraph (c) of this section, and except as necessary for a participating PRP to defend against an action seeking contribution for matters addressed by the final decision, no final decision shall be admissible as evidence of any issue of fact or law in any proceeding brought under any provision of CERCLA or any other provision of law.

(e) Neither the initiation of an arbitral proceeding nor the rendering of a final decision on an EPA claim shall preclude or otherwise affect the ability of the United States, including EPA, to:

(1) Seek injunctive relief against any participating PRP for further response action at the facility concerned pursuant to CERCLA or any other applicable statute, regulation or legal theory; or

(2) Take further response action at the facility concerned pursuant to CERCLA or any other applicable statute, regulation or legal theory; or

(3) Seek reimbursement from any participating PRP for any costs not the subject of the arbitral proceeding pursuant to CERCLA or any other applicable statute, regulation or legal theory; or

(4) Seek any relief for any violation of criminal law from any participating PRP; or

(5) Seek damages for injury to, destruction of, or loss of natural resources from any participating PRP; or

(6) Seek any relief, civil or criminal, from any person not a party to the arbitral proceeding under CERCLA or any other applicable statute, regulation or legal theory.

§ 304.41 Administrative fees, expenses, and Arbitrator's fee.

(a) The Association shall prescribe an Administrative Fee Schedule and a Refund Schedule, which shall be subject to the approval of EPA. The schedule in effect at the time of filing or the time of refund shall be applicable.

(b) Expenses of witnesses shall be borne by the party producing such witnesses. The expense of the stenographic record and all transcripts thereof shall be prorated equally among all parties ordering copies, unless otherwise agreed by the parties, or unless the Arbitrator assesses such expenses or any part thereof against any specified party in the decision. The expense of an interpreter shall be borne by the party requesting the interpreter.

(c) The Association shall establish the per diem fee for the Arbitrator, subject to the approval of EPA, prior to the commencement of any activities by the Arbitrator. Arrangements for compensation of the Arbitrator shall be made by the Association.

(d) The Association shall make appropriate arrangements to pay the Arbitrator's fee and the administrative fee, and shall render an accounting to the parties in accordance with the Arbitrator's award, within thirty days after the date of the final decision.

(e) In any arbitration conducted prior to the selection of the Association (*see* § 304.21(e) of this part), all fees and expenses of the arbitral proceeding, including the Arbitrator's fee, shall be divided equally among all parties, except that expenses of witnesses shall be borne by the party producing such witnesses, expenses of an interpreter shall be borne by the party requesting such interpreter, and the expense of the stenographic record and all transcripts thereof shall be prorated equally among all parties ordering copies.

§ 304.42 Miscellaneous provisions.

(a) Any party who proceeds with the arbitration knowing that any provision or requirement of this part has not been complied with, and who fails to object thereto either orally or in writing in a timely manner, shall be deemed to have waived the right to object.

(b) The original of any joint request for arbitration, modification to any joint request for arbitration, pleading, letter, or other document filed in the proceeding (except for exhibits and other documentary evidence) shall be signed by the filing party or by his or her attorney.

(c) All papers associated with the proceeding that are served by a party to an opposing party shall be served by personal service, or by United States first class mail, or by United States certified mail, return receipt requested, addressed to the party's attorney, or if the party is not represented by an attorney or the attorney cannot be located, to the last known address of the party. All papers associated with the proceeding that are served by the Arbitrator or by the Association shall be served by personal service or by United States certified mail, return receipt requested, addressed to the party's attorney, or if the party is not represented by an attorney or the attorney cannot be located, to the last known address of the party.

(d) If any provision of this part, or the application of any provision of this part to any person or circumstance, is held invalid, the application of such provision to other persons or circumstances and the remainder of this part shall not be affected thereby.

PART 310—REIMBURSEMENT TO LOCAL GOVERNMENTS FOR EMERGENCY RESPONSE TO HAZARDOUS SUBSTANCE RELEASES

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AUTHORITY: 42 U.S.C. 9611(c)(11), 9623.

SOURCE: 52 FR 39396, Oct. 21, 1987, unless otherwise noted.

Subpart A—General

§ 310.05 Purpose, scope and applicability.

(a) Through this regulation, the Environmental Protection Agency is establishing the procedures for reimbursing local governments for temporary emergency measures to prevent or mitigate injury to human health or the environment, as authorized under section 123 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). This program is intended to alleviate significant financial burden on local governments for response to releases or threatened releases of hazardous substances or pollutants or contaminants and will not supplant local funds normally provided for response. Reimbursement does not apply to expenditures incurred in the course of providing what are traditionally local services and responsibilities, such as routine firefighting.

(b) Applications for reimbursement for temporary emergency measures may be submitted only through the procedures established in this regulation. Any general purpose unit of local government for a political subdivision may request reimbursement. States are not eligible for this program. Under this regulation, local governments may apply for reimbursement for temporary emergency measures performed subsequent to promulgation of this rule. Reimbursement may be made for temporary emergency measures conducted during either Federal-lead or non-Federal-lead responses.

(c) Reimbursement to local governments for temporary emergency measures may not exceed $25,000 per single response, nor may reimbursement supplant local funds normally provided for response. Because CERCLA specifies that no more than 0.1% of the amount appropriated from the Hazardous Substance Superfund may be allocated to the reimbursement program for the five fiscal years beginning October 1, 1986, some requests may not ever be reimbursed even though they meet all requirements of this regulation.

§ 310.10 Abbreviations.

CERCLA—The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Pub. L. 96-510), 42 U.S.C. 9601-75, as amended by the Superfund Amendments and Reauthorization Act of 1986, also known as Superfund.

EPA or the Agency—Environmental Protection Agency.

NCP—National Contingency Plan.

OMB—Office of Management and Budget.

SARA—The Superfund Amendments and Reauthorization Act of 1986 (Pub. L. 99-499)

USCG—U.S. Coast Guard.

§ 310.11 Definitions.

For purposes of this rule except when otherwise specified:

(a) "Date of completion" means the date when all field work has been completed and all deliverables (e.g., lab results, technical expert reports) have been received by the local government.

(b) "Emergency Planning and Community Right-To-Know Act of 1986" means Title III—Emergency Planning and Community Right-To-Know of the Superfund Amendments and Reauthorization Act of 1986.

(c) "General purpose unit of local government" means the governing body of a county, parish, municipality, city, town, township, Federally-recognized Indian tribe or similar governing body.

(d) "Hazardous substance," as defined by section 101(14) of CERCLA, means:

(1) Any substance designated pursuant to section 311(b)(2)(A) of the Federal Water Pollution Control Act,

(2) Any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA,

(3) Any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress),

(4) Any toxic pollutant listed under section 307(a) of the Federal Water Pollution Control Act,

(5) Any hazardous air pollutant listed under section 112 of the Clean Air Act, and

(6) Any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act.

The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under paragraphs (d)(1) through (d)(6) of this section, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures or natural gas and such synthetic gas).

(e) "Local comprehensive emergency response plan" means the emergency plan prepared by the local emergency planning committee as required by section 303 of the Emergency Planning and Community Right-To-Know Act of 1986 (SARA Title III).

(f) "National Contingency Plan" means the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300).

(g) "National Response Center" means the national communications center located in Washington, DC, that receives and relays notice of oil discharge or releases of hazardous substances to appropriate Federal officials.

(h) "Pollutant or contaminant," as defined by section 104(a)(2) of CERCLA, includes, but is not limited to, any element, substance, compound, or mixture, including disease-causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring. The term does not include petroleum, including crude oil and any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under section 101(14)(A) through (F) of CERCLA, nor does it include natural gas, liquefied natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and such synthetic gas).

(i) "Release," as defined by section 101(22) of CERCLA, means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injection, escaping, leaching, dumping, or disposing into the environment, but excludes: any release that results in exposure to persons solely within a workplace, with respect to a claim that such persons may assert against the employer of such persons; emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; release of source, by-product or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such act, or, for the purpose of section 104 of CERCLA or any other response action, any release of source, by-product, or special nuclear material from any processing site designated under section 122(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978; and the normal application of fertilizer. For the purpose of this regulation, release also means substantial threat of release.

(j) "Single response" means all of the concerted activities conducted in response to a single episode, incident or threat causing or contributing to a release or threatened release of hazardous substances or pollutants or contaminants.

§ 310.12 Penalties.

Any person who knowingly gives or causes to be given any false statement or claim as part of any application for reimbursement under section 123 of CERCLA, upon conviction, may be fined or imprisoned subject to the False Statement Act (18 U.S.C. 1001) and the False Claims Act (31 U.S.C. 3729).

Subpart B—Reimbursement

§ 310.20 Eligibility for reimbursement.

(a) Any general purpose unit of local government may request reimbursement for temporary emergency measures if all requirements under § 310.30 of this rule are met.

(b) States are not eligible for reimbursement for temporary emergency measures and no State may request reimbursement on its own behalf or on the behalf of political subdivisions within the State.

§ 310.30 Requirements for requesting reimbursement.

(a) Response must have been initiated on or after the effective date of this rule.

(b) The local government must inform EPA or the National Response Center (NRC) of the response as soon as possible, but not later than 24 hours after the start of response, unless EPA or the USCG has been contacted via the NRC or other established response communication channel. EPA Regional offices and NRC telephone numbers are designated in Appendix I to this rule.

(c) Requests for reimbursement must demonstrate that response actions are not inconsistent with CERCLA, the NCP and, where applicable, the local comprehensive emergency response plan completed under the Emergency Planning and Community Right-to-Know Act of 1986.

(d) Requests for reimbursement must provide assurance that reimbursement for costs incurred for temporary emergency measures does not supplant local funds normally provided for response.

(e) Applicants for reimbursement must first present requests for payment of incurred costs to all known potentially responsible parties and permit at least 60 days for payment or for expression of intent to pay or willingness to negotiate prior to submitting a reimbursement request to the Agency. Local governments also must pursue all other sources of reimbursement (e.g., insurance, reimbursement from the State) before seeking reimbursement from EPA under this rule.

(f) After October 17, 1988, the applicant's jurisdicition must be included in the comprehensive emergency response plan completed by the local emergency planning committee as required by section 303(a) of the Emergency Planning and Community Right-to-Know Act of 1986. This requirement does not apply if the State Emergency Response Commission (SERC) has not established a local emergency planning committee(s) responsible for the emergency planning district(s) encompassing the applicant's geographic boundaries.

§ 310.40 Allowable and unallowable costs.

To be allowable, costs for which reimbursement is sought must be consistent with CERCLA and with Federal cost principles outlined in the OMB Circular A-87, "Cost Principles for State and Local Governments." The local government may also seek assistance from the EPA Regional Office in determining which costs may be allowable. Final determination of the reasonableness of the costs for which reimbursement is sought will be made by EPA.

(a) In general, allowable costs are those project costs that are eligible, reasonable, necessary and allocable to the project. Costs allowable for reimbursement may include, but are not limited to:

(1) Disposable materials and supplies acquired, consumed and expended specifically for the purpose of the response for which reimbursement is being requested (hereafter referred to as "the response");

(2) Compensation of employees for the time and efforts devoted specifically to the response that are not othewise provided for in the applicant's operating budget (e.g., overtime pay for permanent full-time and other than full-time employees);

(3) Rental or leasing of equipment used specifically for the response (e.g., protective equipment or clothing, scientific and technical equipment) (Note: reimbursement for these costs will not exceed the duration of the response);

(4) Replacement costs for equipment owned by the applicant that is contaminated beyond reuse or repair, if the applicant can demonstrate that the equipment was a total loss and that the loss occurred during the response (e.g., self-contained breathing apparatus irretrievably contaminated during the response);

(5) Decontamination of equipment contaminated during the reponse;

(6) Special technical services specifically required for the response (e.g., costs associated with the time and efforts of technical experts/specialists not otherwise provided for by the local government);

(7) Other special services specifically required for the response (e.g., utilities);

(8) Laboratory costs for purposes of analyzing samples taken during the response;

(9) Costs associated with the services, supplies and equipment procured for a specific evacuation.

(b) In general, costs unallowable for reimbursement include, but are not limited to:

(1) Purchase or routine maintenance of equipment of a durable nature that is expected to have a period of service of one year or more after being put into use without material impairment of its physical condition, except as provided in paragraphs (a)(4) and (a)(5) of this section;

(2) Materials and supplies not purchased specifically for the response;

(3) Employee fringe benefits;

(4) Administrative costs for filing reimbursement applications;

(5) Employee out-of-pocket expenses normally provided for in the applicant's operating budget (e.g., meals, fuel);

(6) Legal expenses that may be incurred as a result of response activities, including efforts to recover costs from potentially responsible parties;

(7) Medical expenses incurred as a result of response activities.

(c) The local government must ensure that costs incurred are substantiated and that cost documentation is adequate for an Agency audit. Documentation of response costs must include at a minimum:

(1) Specification of the temporary emergency measures for which reimbursement is requested;

(2) Specification of the local agency incurring the cost;

(3) Detailed breakdown of actual costs, by cost element such as overtime, equipment rental;

(4) Supporting documents such as invoices, sales receipts, rental or leasing agreements;

(5) Generally accepted accounting practices consistently applied.

Subpart C—Procedures for Filing and Processing Reimbursement Requests

§ 310.50 Filing procedures.

(a) Only one request for reimbursement will be accepted for each hazardous substance emergency requiring immediate response at the local level. When more than one local agency has participated in such a response, those agencies must determine which single agency will submit the request on behalf of them all.

(b) A request for reimbursement must be submitted on EPA form 9310-1, illustrated in Appendix II, and must demonstrate that:

(1) Costs for which reimbursement is sought were incurred for temporary emergency measures taken by the local government to protect human health and the environment from releases or threatened releases of hazardous substances, pollutants or contaminants; temporary emergency measures may include security, source control, release containment, neutralization or other treatment methods, contaminated runoff control and similar activities mitigating immediate threats to human health and the environment;

(2) Reasonable effort has been made to recover costs from the responsible party and from any other available source and that such effort has been unsuccessful;

(3) Response actions were not inconsistent with CERCLA, the NCP and, if applicable, the local emergency response plan required under Title III of SARA.

(c) Applicants must certify that:

(1) All costs are accurate and were incurred specifically for the response for which reimbursement is being requested;

(2) The local government complied with the requirement to inform EPA or the USCG of the response, as specified in § 310.30(b);

(3) Reimbursement for costs incurred for response activities does not

nt local funds normally provid-
response;
f costs subsequentl; are recov-
om responsible parties or other
s after the local government has
d reimbursement from the Su-
d, the local government agrees
rn to EPA the reimbursement
for which costs have been re-
d.

eimbursement requests must be
d by EPA within six months of
e of completion of the response
ich reimbursement is being re-
d unless a cost recovery action is
g, in which case EPA will waive
dline.

A request for reimbursement
e signed by the chief executive
of the local government or his
delegate.

Verification and reimbursement.

pon receipt of a reimbursement
, EPA will verify that it com-
ith all requirements. Where the
is incomplete or has signifi-
efects, EPA will return the re-
o the applicant with written no-
on of its deficiencies.

request returned to the appli-
or correction of deficiencies
e resubmitted to EPA within 60

or purposes of this regulation, a
rsement request is deemed com-
hen EPA determines that the
complies fully with all require-
for reimbursement and with all
rocedures. When the request is
te, a notice will be provided to
plicant of EPA's receipt and ac-
ce for evaluation.

EPA determines that it cannot
te its evaluation of a request
e the records, documents and
vidence were not maintained in
nce with generally accepted ac-
g principles and practices con-
y applied, or were for any
inadequate to demonstrate the
bleness of the costs claimed,
ay reject the request or make
ents, if possible. Further con-
on of such amounts will
on the adequacy of subsequent
ntation. Any additional infor-
requested by EPA must be sub-
within 60 days unless specifically extended by EPA. The failure of the applicant to provide in a timely manner the requested information without reasonable cause may be cause for denial of the reimbursement request.

(e) When the reimbursement request is completed, EPA will rank the request on the basis of financial burden. Financial burden will be based on the ratio of eligible response costs to the applicant locality's per capita income adjusted for population. Per capita income and population statistics used to calculate financial burden shall be those published by the U.S. Department of Commerce, Bureau of the Census, in Current Population Reports, Local Population Estimates, Series P-26, "1984 Population and 1983 Per Capita Income Estimates for Counties and Incorporated Places," Vols. 84-S-SC, 84-MW-SC, 84-NE-SC, 84-W-SC, 84-WNC-SC, June 1986. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies are available from the Bureau of the Census, Office of Public Affairs, Department of Commerce, Constitution Avenue, NE., Washington, DC 20230 (1-202-763-4040). Copies may be inspected at the U.S. Environmental Protection Agency, 401 M Street, SW., Room LG-100, Washington, DC, or at the Office of the Federal Register, 1100 L Street, NW., Room 8401, Washington, DC. In ranking requests on the basis of financial burden, EPA also will give consideration to other relevant financial information supplied by the applicant. Once the request is ranked, EPA will:

(1) Reimburse the request or;

(2) Decline to reimburse the request or;

(3) Hold the request for consideration in a subsequent period;

(f) Reimbursement will be made:

(1) Only for costs that are allowable, reasonable and necessary;

(2) Only to the extent that the temporary emergency measures conformed to response criteria established by CERCLA, the NCP and the local emergency response plan, if applicable.

(g) The EPA reimbursement official will provide the requester with a written final decision. Payment of approved requests will be made according to § 310.80 of this regulation.

(h) Requests that are not reimbursed during the review period in which they are first considered remain open for consideration, at the EPA reimbursement official's discretion, for one year. EPA will notify the requester in writing if the request is held for later review. After that time, an unreimbursed request will no longer be considered and EPA will notify the requester in writing that the request has been denied.

§ 310.70 Records retention.

An applicant receiving a reimbursement from the Superfund is required to maintain all cost documentation and any other records relating to the reimbursement request and to provide EPA with access to such records. If, after six years from the date of the reimbursement from the Superfund, EPA has not initiated a cost recovery action, the applicant need retain the records no longer. The applicant must, however, notify EPA and allow EPA the opportunity to take possession of the records before they are destroyed.

§ 310.80 Payment of approved reimbursement requests.

A reimbursement from the Superfund can be paid only when Superfund monies are available. An approved request in excess of Superfund appropriations available to EPA may be paid only when additional money is appropriated. As appropriations in the Superfund become available, reimbursements will be made in the order in which approved requests are ranked, according to relative financial burden.

§ 310.90 Disputes resolution.

The procedures in this section apply to reviews of denial of reimbursement and reviews of amount of reimbursement.

(a) The EPA reimbursement official's decision constitutes final Agency action unless the requester files a request for review by registered mail within 60 calendar days of the date of decision.

(b) The request for review of the EPA reimbursement official's final written decision must be filed with the disputes decision official identified in the final written decision.

(c) The request for review must include:

(1) A copy of the EPA reimbursement official's final decision;

(2) A statement of the amount in dispute;

(3) A description of the issues involved and;

(4) A concise statement of the requester's objection to the final decision.

(d) After filing for review, the requester:

(1) Is entitled to an informal conference with the EPA disputes decision official;

(2) May be represented by counsel and may submit documentary evidence and briefs for inclusion in a written record; and

(3) Is entitled to a written decision from the disputes decision official.

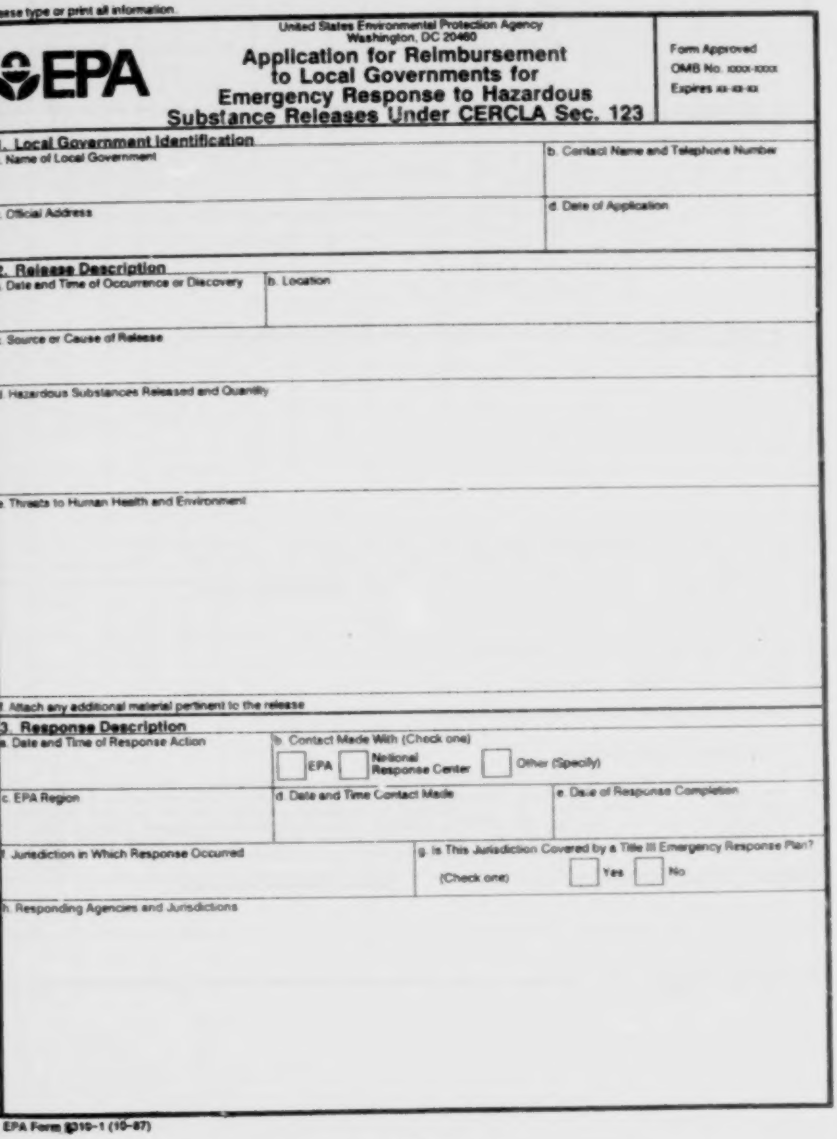
APPENDIX I—EPA REGIONS AND NRC TELEPHONE LINES

EPA regional office	States in region
I—Boston	ME, NH, VT, MA, RI, CT
II—New York	NJ, NY, PR, VI
III—Philadelphia	PA, DE, MD, DC, VA, WV
IV—Atlanta	NC, SC, TN, MS, AL, GA FL, KY
V—Chicago	OH, IN, IL, WI, MN, MI
VI—Dallas	AR, LA, TX, OK, NM
VII—Kansas City	IA, MO, KS, NE
VIII—Denver	CO, UT, WY, MT, ND, SD
IX—San Francisco	AZ, CA, NV, AS, HI, GU, TT
X—Seattle	ID, OR, WA, AK

National Response Center

1-800-424-8802 (National—toll free) 426-2675 (Washington, DC)

PPENDIX II—APPLICATION FOR REIMBURSEMENT TO LOCAL GOVERNMENTS FOR EMERGENCY RESPONSE TO HAZARDOUS SUBSTANCE RELEASES UNDER CERCLA SECTION 123



ease type or print all information.

United States Environmental Protection Agency
Washington, DC 20460

EPA

Application for Reimbursement to Local Governments for Emergency Response to Hazardous Substance Releases Under CERCLA Sec. 123

Form Approved
OMB No. xxxx-xxxx
Expires xx-xx-xx

. Local Government Identification

. Name of Local Government

b. Contact Name and Telephone Number

. Official Address

d. Date of Application

. Release Description

. Date and Time of Occurrence or Discovery

b. Location

. Source or Cause of Release

. Hazardous Substances Released and Quantity

. Threats to Human Health and Environment

. Attach any additional material pertinent to the release

3. Response Description

. Date and Time of Response Action

b. Contact Made With (Check one)
☐ EPA ☐ National Response Center ☐ Other (Specify)

c. EPA Region

d. Date and Time Contact Made

e. Date of Response Completion

. Jurisdiction in Which Response Occurred

g. Is This Jurisdiction Covered by a Title III Emergency Response Plan?
(Check one) ☐ Yes ☐ No

h. Responding Agencies and Jurisdictions

EPA Form 9310-1 (10-87)

g. Summary of Response Actions

. Temporary Emergency Measures for Which Reimbursement Is Sought

. Demonstration that Costs Claimed Do Not Supplant Local Funds Normally Provided for Response and Exceed Resources Committed in Local Emergency Response Plan

. Attach any additional material pertinent to the response

4. Cost Information

a. Total Response Cost $	b. Total Reimbursement Requested $

c. Complete and Attach Table 1, "Detailed Cost Breakdown"

d. Attach Evidence of Attempt To Recover Costs

e. Attach Other Pertinent Financial Information (See instructions)

5. Certifications and Authorization

I hereby certify that (1) all costs are accurate and were incurred specifically for the response for which reimbursement is being requested; (2) the requirement to inform EPA or the U.S. Coast Guard of the response has been met; (3) reimbursement for costs incurred for response activities does not supplant local funds normally provided for response; (4) all other available sources of funds have been pursued and (5) reimbursement funds for which costs are later recovered will be returned to EPA. I further certify that I am authorized to request this reimbursement and to receive funds from the Federal Government.

Printed or Typed Name of Authorized Representative	Signature of Authorized Representative
Title	Date

EPA Form 9310-1 (10-87) Reverse

Temporary Emergency Measure	Cost Incurred By	Cost Element	Amount

EPA Form 9310-1 (10-87)

Attach supporting documentation, e.g., invoices, sales receipts, rental agreements

PART 311—WORKER PROTECTION

Sec.
311.1 Scope and application.
311.2 Definition of employee.

AUTHORITY: 29 U.S.C. 655, Pub. L. 99-499.

SOURCE: 54 FR 26658, June 23, 1989, unless otherwise noted.

EFFECTIVE DATE NOTE: At 54 FR 26658, June 23, 1989, Part 311 was added, effective July 24, 1989.

EFFECTIVE DATE NOTE: Information collection requirements for Part 311 are not yet effective, pending approval by the Office of Management and Budget. EPA will publish notice of the effective date.

§ 311.1 Scope and application.

The substantive provisions found at 29 CFR 1910.120 on and after March 6, 1990, and before March 6, 1990, found at 54 FR 9317 (March 6, 1989), apply to State and local government employees engaged in "hazardous waste operations", as defined in 29 CFR 1910.120(a), in States that do not have a State plan approved under section 18 of the Occupational Safety and Health Act of 1970.

§ 311.2 Definition of employee.

"Employee" in § 311.1 is defined as a compensated or non-compensated worker who is controlled directly by a State or local government, as contrasted to an independent contractor.

PART 350—TRADE SECRECY CLAIMS FOR EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW INFORMATION: AND TRADE SECRET DISCLOSURES TO HEALTH PROFESSIONALS

Subpart A—Trade Secrecy Claims

Sec.
350.1 Definitions.
350.3 Applicability of subpart; priority where provisions conflict; interaction with 40 CFR Part 2.
350.5 Assertion of claims of trade secrecy.
350.7 Substantiating claims of trade secrecy.
350.9 Initial action by EPA.
350.11 Review of claim.
Sec.
350.13 Sufficiency of assertions.
350.15 Public petitions requesting disclosure of chemical identity claimed as trade secret.
350.16 Address to send trade secrecy claims and petitions requesting disclosure.
350.17 Appeals.
350.18 Release of chemical identity determined to be non-trade secret; notice of intent to release chemical identity.
350.19 Provision of information to States.
350.21 Adverse health effects.
350.23 Disclosure to authorized representatives.
350.25 Disclosure in special circumstances.
350.27 Substantiation form to accompany claims of trade secrecy, instructions to substantiation form.
APPENDIX A TO SUBPART A—RESTATEMENT OF TORTS SECTION 757, COMMENT b

Subpart B—Disclosure of Trade Secret Information to Health Professionals

350.40 Disclosure to health professionals.

AUTHORITY: 42 U.S.C. 11042, 11043 and 11048 Pub. L. 99-499, 100 Stat. 1747.

SOURCE: 53 FR 28801, July 29, 1988, unless otherwise noted.

Subpart A—Trade Secrecy Claims

§ 350.1 Definitions.

"Administrator" and "General Counsel" mean the EPA officers or employees occupying the positions so titled.

"Business confidentiality" or "confidential business information" includes the concept of trade secrecy and other related legal concepts which give (or may give) a business the right to preserve the confidentiality of business information and to limit its use or disclosure by others in order that the business may obtain or retain business advantages it derives from its right in the information. The definition is meant to encompass any concept which authorizes a Federal agency to withhold business information under 5 U.S.C. 552(b)(4), as well as any concept which requires EPA to withhold information from the public for the benefit of a business under 18 U.S.C. 1905.

"Claimant" means a person submitting a claim of trade secrecy to EPA in connection with a chemical otherwise required to be disclosed in a report or other filing made under Title III.

"Petitioner" is any person who sub-
ts a petition under this regulation
questing disclosure of a chemical
ntity claimed as trade secret.

'Sanitized" means a version of a doc-
ient from which information
imed as trade secret or confidential
s been omitted or withheld.

'Senior management official" means
official with management responsi-
ity for the person or persons com-
ting the report, or the manager of
vironmental programs for the facili-
or establishments, or for the corpo-
ion owning or operating the facility
establishments responsible for certi-
ng similar reports under other envi-
mental regulatory requirements.

'Specific chemical identity" means
e chemical name, Chemical Ab-
acts Service (CAS) Registry
mber, or any other information
at reveals the precise chemical des-
nation of the substance. Where the
de name is reported in lieu of the
ecific chemical identity, the trade
me will be treated as the specific
emical identity for purposes of this
rt.

'Submitter" means a person filing a
quired report or making a claim of
de secrecy to EPA under sections
3 (d)(2) and (d)(3), 311, 312, and 313
Title III.

'Substantiation" means the written
swers submitted to EPA by a sub-
tter to the specific questions set
rth in this regulation in support of a
im that chemical identity is a trade
cret.

"Title III" means Title III of the Su-
rfund Amendments and Reauthor-
ation Act of 1986, also titled the
nergency Planning and Community
ght-to-Know Act of 1986.

"Trade secrecy claim" is a submittal
der sections 303 (d)(2) or (d)(3), 311,
2 or 313 of Title III in which a
emical identity is claimed as trade
cret, and is accompanied by a sub-
antiation in support of the claim of
de secrecy for chemical identity.

"Trade secret" means any confiden-
l formula, pattern, process, device,
formation or compilation of infor-
ation that is used in a submitter's
siness, and that gives the submitter
opportunity to obtain an advantage
er competitors who do not know or
use it. EPA intends to be guided by the Restatement of Torts, Section 757, Comment b.

"Unsanitized" means a version of a document from which information claimed as trade secret or confidential has not been withheld or omitted.

"Working day" is any day on which Federal government offices are open for normal business. Saturdays, Sundays, and official Federal holidays are not working days; all other days are.

§ 350.3 Applicability of subpart; priority where provisions conflict; interaction with 40 CFR Part 2.

(a) *Applicability of subpart.* Sections 350.1 through 350.27 establish rules governing assertion of trade secrecy claims for chemical identity information collected under the authority of sections 303 (d)(2) and (d)(3), 311, 312 and 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986, and for trade secrecy or business confidentiality claims for information submitted in a substantiation under sections 303 (d)(2) and (d)(3), 311, 312, and 313 of Title III. This subpart also establishes rules governing petitions from the public requesting the disclosure of chemical identity claimed as trade secret, and determinations by EPA of whether this information is entitled to trade secret treatment. Claims for confidentiality of the location of a hazardous chemical under section 312(d)(2)(F) of Title III are not subject to the requirements of this subpart.

(b) *Priority where provisions conflict.* Where information subject to the requirements of this subpart is also collected under another statutory authority, the confidentiality provisions of that authority shall be used to claim that information as trade secret or confidential when submitting it to EPA under that statutory authority.

(c) *Interaction with 40 CFR Part 2, EPA's Freedom of Information Act procedures.* (1) No trade secrecy or business confidentiality claims other than those allowed in this subpart are permitted for information collected under sections 303 (d)(2) and (d)(3), 311, 312 and 313 of Title III.

(2) Except as provided in § 350.25 of this subpart, request for access to chemical identities withheld as trade secret under this regulation is solely through this regulation and procedures hereunder, not through EPA's Freedom of Information Act procedures set forth at 40 CFR Part 2.

(3) Request for access to information other than chemical identity submitted to EPA under this regulation is through EPA's Freedom of Information Act regulations at 40 CFR Part 2.

§ 350.5 Assertion of claims of trade secrecy.

(a) A claim of trade secrecy may be made only for the specific chemical identity of an extremely hazardous substance under sections 303 (d)(2) and (d)(3), a hazardous chemical under sections 311 and 312, and a toxic chemical under section 313.

(b) Method of asserting claims of trade secrecy for information submitted under sections 303 (d)(2) and (d)(3).

(1) In submitting information to the local emergency planning committee under sections 303 (d)(2) or (d)(3), the submitter may claim as trade secret the specific chemical identity of any chemical subject to reporting under section 303.

(2) To make a claim, the submitter shall submit to EPA the following:

(i) A copy of the information which is being submitted under sections 303 (d)(2) or (d)(3) to the local emergency planning committee, with the chemical identity or identities claimed trade secret deleted, and the generic class or category of the chemical identity or identities inserted in its place. The method of choosing generic class or category is set forth in paragraph (f) of this section.

(ii) A sanitized and unsanitized substantiation in accordance with § 350.7 for each chemical identity claimed as trade secret.

(3) If the submitter wishes to claim information in the substantiation as trade secret or business confidential, it shall do so in accordance with § 350.7(d).

(4) Section 303 claims shall be sent to the address specified in § 350.16 of this regulation.

(c) Method of asserting claims of trade secrecy for information submitted under section 311.

(1) Submitters may claim as trade secret the specific chemical identity of any chemical subject to reporting under section 311 on the material safety data sheet or chemical list under section 311.

(2) To assert a claim for a chemical identity on a material safety data sheet under section 311, the submitter shall submit to EPA the following:

(i) One copy of the material safety data sheet which is being submitted to the State emergency response commission, the local emergency planning committee and the local fire department, which shall make it available to the public. In place of the specific chemical identity claimed as trade secret, the generic class or category of the chemical claimed as trade secret shall be inserted. The method of choosing generic class or category is set forth in paragraph (f) of this section.

(ii) A sanitized and unsanitized substantiation in accordance with § 350.7 for every chemical identity claimed as trade secret.

(3) To assert a claim for a chemical identity on a list under section 311, the submitter shall submit to EPA the following:

(i) An unsanitized copy of the chemical list under section 311. The submitter shall clearly indicate the specific chemical identity claimed as trade secret, and shall label it *"Trade Secret."* The generic class or category of the chemical claimed as trade secret shall be inserted directly below the claimed chemical identity. The method of choosing generic class or category is set forth in paragraph (f) of this section.

(ii) A sanitized copy of the chemical list under section 311. This copy shall be identical to the document in paragraph (c)(3)(i) of this section except that the submitter shall delete the chemical identity claimed as trade secret, leaving in place the generic class or category of the chemical claimed as trade secret. This copy shall be sent by the submitter to the State emergency response commission, the local emergency planning commit-

and the local fire department,
ich shall make it available to the
blic.

ii) A sanitized and unsanitized sub-
ntiation in accordance with § 350.7
every chemical identity claimed as
de secret.

i) If the submitter wishes to claim
ormation in the substantiation as
de secret or business confidential, it
ll do so in accordance with
50.7(d).

5) Section 311 claims shall be sent
the address specified in § 350.16 of
s regulation.

d) Method of asserting claims of
de secrecy for information submit-
under section 312.

1) Submitters may claim as trade
ret the specific chemical identity of
chemical subject to reporting
der section 312.

2) To assert a claim the submitter
ll submit to EPA the following:

) An unsanitized copy of the Tier II
ergency and hazardous chemical in-
tory form under section 312. (The
r I emergency and hazardous chem-
inventory form does not require
reporting of specific chemical
ntity and therefore no trade secre-
claims may be made with respect to
t form.) The submitter shall clear-
indicate the specific chemical iden-
claimed as trade secret by check-
the box marked "trade secret"
xt to the claimed chemical identity.

ii) A sanitized copy of the Tier II
ergency and hazardous chemical in-
tory form. This copy shall be iden-
al to the document in paragraph
(2)(i) of this section except that the
mitter shall delete the chemical
ntity or identities claimed as trade
ret and include instead the generic
ss or category of the chemical
imed as trade secret. The method of
oosing generic class or category is
forth in paragraph (f) of this sec-
n. The sanitized copy shall be sent
the submitter to the State emer-
ncy response commission, local
ergency planning committee or the
al fire department, whichever
tity requested the information.

iii) A sanitized and unsanitized sub-
ntiation in accordance with § 350.7
every chemical identity claimed as
de secret.

(3) If the submitter wishes to claim information in the substantiation as trade secret or business confidential, it shall do so in accordance with § 350.7(d).

(4) Section 312 claims shall be sent to the address specified in § 350.16 of this regulation.

(e) Method of asserting claims of trade secrecy for information submitted under section 313.

(1) Submitters may claim as trade secret the specific chemical identity of any chemical subject to reporting under section 313.

(2) To make a claim, the submitter shall submit to EPA the following:

(i) An unsanitized copy of the toxic release inventory form under section 313 with the information claimed as trade secret clearly identified. To do this, the submitter shall check the box on the form indicating that the chemical identity is being claimed as trade secret. The submitter shall enter the generic class or category that is structurally descriptive of the chemical, as specified in paragraph (f) of this section.

(ii) A sanitized copy of the toxic release inventory form. This copy shall be identical to the document in paragraph (e)(2)(i) of this section except that the submitter shall delete the chemical identity claimed as trade secret. This copy shall also be submitted to the State official or officials designated to receive this information.

(iii) A sanitized and unsanitized substantiation in accordance with § 350.7 for every chemical identity claimed as trade secret.

(3) If the submitter wishes to claim information in the substantiation as trade secret or business confidential, it shall do so in accordance with § 350.7(d).

(4) Section 313 claims shall be sent to the address specified in § 350.16 of this regulation.

(f) Method of choosing generic class or category for sections 303, 311, 312 and 313. A facility owner or operator claiming chemical identity as trade secret should choose a generic class or category for the chemical that is structurally descriptive of the chemical.

(g) If a specific chemical identity is submitted under Title III to EPA, or to a State emergency response commission, designated State agency, local emergency planning committee or local fire department, without asserting a trade secrecy claim, the chemical identity shall be considered to have been voluntarily disclosed, and non-trade secret.

(h) A submitter making a trade secrecy claim under this section shall submit to entities other than EPA (e.g., a designated State agency, local emergency planning committee and local fire department) only the sanitized or public copy of the submission and substantiation.

§ 350.7 Substantiating claims of trade secrecy.

(a) Claims of trade secrecy must be substantiated by providing a specific answer including, where applicable, specific facts, to each of the following questions with the submission to which the trade secrecy claim pertains. Submitters must answer these questions on the form entitled "Substantiation to Accompany Claims of Trade Secrecy" in § 350.27 of this subpart.

(1) Describe the specific measures you have taken to safeguard the confidentiality of the chemical identity claimed as trade secret, and indicate whether these measures will continue in the future.

(2) Have you disclosed the information claimed as trade secret to any other person (other than a member of a local emergency planning committee, officer or employee of the United States or a State or local government, or your employee) who is not bound by a confidentiality agreement to refrain from disclosing this trade secret information to others?

(3) List all local, State, and Federal government entities to which you have disclosed the specific chemical identity. For each, indicate whether you asserted a confidentiality claim for the chemical identity and whether the government entity denied that claim.

(4) In order to show the validity of a trade secrecy claim, you must identify your specific use of the chemical claimed as trade secret and explain why it is a secret of interest to competitors. Therefore:

(i) Describe the specific use of the chemical claimed as trade secret, identifying the product or process in which it is used. (If you use the chemical other than as a component of a product or in a manufacturing process, identify the activity where the chemical is used.)

(ii) Has your company or facility identity been linked to the specific chemical identity claimed as trade secret in a patent, or in publications or other information sources available to the public or your competitors (of which you are aware)? If so, explain why this knowledge does not eliminate the justification for trade secrecy.

(iii) If this use of the chemical claimed as trade secret is unknown outside your company, explain how your competitors could deduce this use from disclosure of the chemical identity together with other information on the Title III submittal form.

(iv) Explain why your use of the chemical claimed as trade secret would be valuable information to your competitors.

(5) Indicate the nature of the harm to your competitive position that would likely result from disclosure of the specific chemical identity, and indicate why such harm would be substantial.

(6)(i) To what extent is the chemical claimed as trade secret available to the public or your competitors in products, articles, or environmental releases?

(ii) Describe the factors which influence the cost of determining the identity of the chemical claimed as trade secret by chemical analysis of the product, article, or waste which contains the chemical (e.g., whether the chemical is in pure form or is mixed with other substances).

(b) The answers to the substantiation questions listed in paragraph (a) of this section are to be submitted on the form in § 350.27 of this subpart, and included with a submitter's trade secret claim.

(c) An owner, operator or senior official with management responsibility shall sign the certification at the end of the form contained in § 350.27. The certification in both the sanitized and

nsanitized versions of the substantia-
ion must bear an original signature.

(d) *Claims of confidentiality in the*
ubstantiation. (1) The submitter may
laim as confidential any trade secret
r confidential business information
ontained in the substantiation. Such
laims for material in the substantia-
ion are not limited to claims of trade
ecrecy for specific chemical identity,
ut may also include claims of confi-
entiality for any confidential busi-
ess information. To claim this mate-
ial as confidential, the submitter
hall clearly designate those portions
f the substantiation to be claimed as
onfidential by marking those portions
Confidential," or "Trade Secret." In-
ormation not so marked will be treat-
d as public and may be disclosed
ithout notice to the submitter.

(2) An owner, operator, or senior of-
icial with management responsibility
hall sign the certification stating that
hose portions of the substantiation
laimed as confidential would, if dis-
losed, reveal the chemical identity
eing claimed as a trade secret, or
ould reveal other confidential busi-
ess or trade secret information. This
ertification is combined on the sub-
tantiation form in § 350.27 with the
ertification described in paragraph
c) of this section.

(3) The submitter shall submit to
PA two copies of the substantiation,
ne of which shall be the unsanitized
ersion, and the other shall be the
anitized version.

(i) The unsanitized copy shall con-
ain all of the information claimed as
rade secret or business confidential,
arked as indicated in paragraph
d)(1) of this section.

(ii) The second copy shall be identi-
al to the unsanitized substantiation
xcept that it will be a sanitized ver-
ion, in which all of the information
laimed as trade secret or confidential
hall be deleted. If any of the informa-
ion claimed as trade secret in the sub-
tantiation is the chemical identity
hich is the subject of the substantia-
ion, the submitter shall include the
ppropriate generic class or category
f the chemical claimed as trade
ecret. This sanitized copy shall be
ubmitted to the State emergency re-
ponse commission, a designated State agency, the local emergency planning committee and the local fire department, as appropriate, and made publicly available.

(e) *Supplemental information.* (1) EPA may request supplemental information from the submitter in support of its trade secret claim, pursuant to § 350.11(a)(1). EPA may specify the kind of information to be submitted, or the submitter may submit any additional detailed information which further supports the truth of the information previously supplied to EPA in its initial substantiation, under this section.

(2) The submitter may claim as confidential any trade secret or confidential business information contained in the supplemental information. To claim this material as confidential, the submitter shall clearly designate those portions of the supplemental information to be claimed as confidential by marking those portions "Confidential," or "Trade Secret." Information not so marked will be treated as public and may be disclosed without notice to the submitter.

(3) If portions of the supplementary information are claimed confidential, an owner, operator, or senior official with management responsibility of the submitter shall certify that those portions of the supplemental information claimed as confidential would, if disclosed, reveal the chemical identity being claimed as confidential or would reveal other confidential business or trade secret information.

(4) If supplemental information is requested by EPA and the submitter claims portions of it as trade secret or confidential, then the submitter shall submit to EPA two copies of the supplemental information, an unsanitized and a sanitized version.

(i) The unsanitized version shall contain all of the information claimed as trade secret or business confidential, marked as indicated above in paragraph (e)(2) of this section.

(ii) The second copy shall be identical to the unsanitized substantiation except that it will be a sanitized version, in which all of the information claimed as trade secret or confidential shall be deleted. If any of the information claimed as trade secret in the supplemental information is the chemical identity which is the subject of the substantiation, the submitter shall include the appropriate generic class or category of the chemical claimed as trade secret.

§ 350.9 Initial action by EPA.

(a) When a claim of trade secrecy, made in accordance with § 350.5 of this part, is received by EPA, that information is treated as confidential until a contrary determination is made.

(b) A determination as to the validity of a trade secrecy claim shall be initiated upon receipt by EPA of a petition under § 350.15 or may be initiated at any time by EPA if EPA desires to determine whether chemical identity information claimed as trade secret is entitled to trade secret treatment, even though no request for release of the information has been received.

(c) If EPA initiates a determination as to the validity of a trade secrecy claim, the procedures set forth in §§ 350.11, 350.15, and 350.17 shall be followed in making the determination.

(d) When EPA receives a petition requesting disclosure of trade secret chemical identity or if EPA decides to initiate a determination of the validity of a trade secrecy claim for chemical identity, EPA shall first make a determination that the chemical identity claimed as trade secret is not the subject of a prior trade secret determination by EPA concerning the same submitter and facility, or if it is, that the prior determination upheld the submitter's claim of trade secrecy for that chemical identity at that facility.

(1) If EPA determines that the chemical identity claimed as trade secret is not the subject of a prior trade secret determination by EPA concerning the same submitter and the same facility, or if it is, that the prior determination upheld the submitter's claim of trade secrecy, then EPA shall review the submitter's claim according to § 350.11.

(2) If such a prior determination held that the submitter's claim for that chemical identity is invalid, and such determination was not challenged by appeal to the General Counsel, or by review in the District Court, or, if challenged, was upheld, EPA shall notify the submitter by certified mail (return receipt requested) that the chemical identity claimed as trade secret is the subject of a prior, final Agency determination concerning the same facility in which it was held that such a claim was invalid. In this notification EPA shall include notice of intent to disclose chemical identity within 10 days pursuant to § 350.18(c) of this subpart. EPA shall also notify the petitioner by regular mail of the action taken pursuant to this section.

§ 350.11 Review of claim.

(a) *Determination of sufficiency.* When EPA receives a petition submitted pursuant to § 350.15, or if EPA initiates a determination of the validity of a trade secrecy claim for chemical identity, and EPA has made a determination, as required in paragraph (d)(1) of § 350.9, then EPA shall determine whether the submitter has presented sufficient support for its claim of trade secrecy in its substantiation. EPA must make such a determination within 30 days of receipt of a petition. A claim of trade secrecy for chemical identity will be considered sufficient if, assuming all of the information presented in the substantiation is true, this supporting information could support a valid claim of trade secrecy. A claim is sufficient if it meets the criteria set forth in § 350.13.

(1) *Sufficient claim.* If the claim meets the criteria of sufficiency set forth in § 350.13, EPA shall notify the submitter in writing, by certified mail (return receipt requested), that it has 30 days from the date of receipt of the notice to submit supplemental information in writing in accordance with § 350.7(e), to support the truth of the facts asserted in the substantiation. EPA will not accept any supplemental information, in response to this notice, submitted after the 30 day period has expired. The notice required by this section shall include the address to which supplemental information must be sent. The notice may specifically request supplemental information in particular areas relating to the submitter's claim. The notice must also inform the submitter of his right to

m any trade secret or confidential
iness information as confidential,
l shall include a reference to
50.7(e) of this regulation as the
rce for the proper procedure for
ming trade secrecy for trade secret
confidential business information
mitted in the supplemental infor-
:ion requested by EPA.

) *Insufficient claim.* If the claim
s not meet the criteria of sufficien-
set forth in § 350.13, EPA shall
ify the submitter in writing of this
by certified mail (return receipt
uested). Upon receipt of this notice,
submitter may either file an
eal of the matter to the General
unsel under paragraph (a)(2)(i) of
section, or, for good cause shown,
mit additional material in support
ts claim of trade secrecy to EPA
ler paragraph (a)(2)(ii) of this sec-
. The notice required by this sec-
shall include the reasons for
'’s decision that the submitter's
m is insufficient, and shall inform
submitter of its rights within 30
s of receiving notice to file an
eal with EPA's General Counsel or
amend its original substantiation
good cause shown. The notice shall
ude the address of the General
unsel, and the address of the office
which an amendment for good
se shown should be sent. The
ice shall also include a reference to
0.11(a)(2)(i)-(iv) of this subpart as
source on the proper procedures
filing an appeal or for amending
original substantiation.

) *Appeal.* The submitter may file
appeal of a determination of insuf-
ency with the General Counsel
hin 30 days of receipt of the notice
insufficiency, in accordance with
procedures set forth in § 350.17.

i) *Good Cause.* In lieu of an appeal
he General Counsel, the submitter
send additional material in sup-
t of its trade secrecy claim, for
d cause shown, within 30 days of
ipt of the notice of insufficiency.
do so, the submitter shall notify
by letter of its contentions as to
d cause, and shall include in that
er the additional supporting mate-

ii) Good cause is limited to one or
e of the following reasons:

(A) The submitter was not aware of the facts underlying the additional information at the time the substantiation was submitted, and could not reasonably have known the facts at that time; or

(B) EPA regulations and other EPA guidance did not call for such information at the time the substantiation was submitted; or

(C) The submitter had made a good faith effort to submit a complete substantiation, but failed to do so due to an inadvertent omission or clerical error.

(iv) If EPA determines that the submitter has met the standard for good cause, then EPA shall decide, pursuant to paragraph (a) of this section, whether the submitter's claim meets the Agency's standards of sufficiency set forth in § 350.13.

(A) If after receipt of additional material for good cause, EPA decides the claim is sufficient, EPA will determine whether the claim presents a valid claim of trade secrecy according to the procedures set forth in paragraph (b) of this section.

(B) If after receipt of additional material for good cause, EPA decides the claim is insufficient, EPA will notify the submitter by certified mail (return receipt requested) and the submitter may seek review in U.S. District Court within 30 days of receipt of the notice. The notice required by this paragraph shall include EPA's reasons for its determination, and shall inform the submitter of its right to seek review in U.S. District Court within 30 days of receipt of the notice. The petitioner shall be notified of EPA's decision by regular mail.

(v) If EPA determines that the submitter has not met the standard for good cause, then EPA shall notify the submitter by certified mail (return receipt requested). The submitter may seek review of EPA's decision in U.S. District Court within 30 days of receipt of the notice. The notice required in this paragraph shall include EPA's reasons for its determination, and shall inform the submitter of its right to seek review in U.S. District Court within 30 days of receipt of the notice. The petitioner shall be notified of EPA's decision by regular mail.

(b) *Determination of trade secrecy.* Once a claim has been determined to be sufficient under paragraph (a) of this section, EPA must decide whether the claim is entitled to trade secrecy.

(1) If EPA determines that the information submitted in support of the trade secrecy claim is true and that the chemical identity is a trade secret, the petitioner shall be notified by certified mail (return receipt requested) of EPA's determination and may bring an action in U.S. District Court within 30 days of receipt of such notice. The notice required in this paragraph shall include the reasons why EPA has determined that the chemical identity is a trade secret and shall inform the petitioner of its right to seek review in U.S. District Court within 30 days of receipt of the notice. The submitter shall be notified of EPA's decision by regular mail.

(2) If EPA decides that the information submitted in support of the trade secrecy claim is not true and that the chemical identity is not a trade secret:

(i) The submitter shall be notified by certified mail (return receipt requested) of EPA's determination and may appeal to the General Counsel within 30 days of receipt of such notice, in accordance with the procedures set forth in § 350.17. The notice required by this paragraph shall include the reasons why EPA has determined that the chemical identity is not a trade secret and shall inform the submitter of its appeal rights to EPA's General Counsel. The notice shall include the address to which an appeal should be sent and the procedure for filing an appeal, as set forth in § 350.17(a) of this subpart. The petitioner shall be notified of EPA's decision by regular mail.

(ii) The General Counsel shall notify the submitter by certified mail (return receipt requested) of its decision on appeal pursuant to the requirements in § 350.17. The notice required by this paragraph shall include the reasons for EPA's determination. If the General Counsel affirms the decision that the chemical identity is not a trade secret, then the submitter shall have 30 days from the date it receives notice of the General Counsel's decision to bring an action in U.S. District Court. If the General Counsel decides that the chemical identity is a trade secret, then EPA shall follow the procedure set forth in paragraph (b)(1) of this section.

§ 350.13 Sufficiency of assertions.

(a) A substantiation submitted under § 350.7 will be determined to be insufficient to support a claim of trade secrecy unless the answers to the questions in the substantiation submitted under § 350.7 support all of the following conclusions. This substantiation must include, where applicable, specific facts.

(1) The submitter has not disclosed the information to any other person, other than a member of a local emergency planning committee, an officer or employee of the United States or a State or local government, an employee of such person, or a person who is bound by a confidentiality agreement, and such person has taken reasonable measures to protect the confidentiality of such information and intends to continue to take such measures. To support this conclusion, the facts asserted must show all of the following:

(i) The submitter has taken reasonable measures to prevent unauthorized disclosure of the specific chemical identity and will continue to take such measures.

(ii) The submitter has not disclosed the specific chemical identity to any person who is not bound by an agreement to refrain from disclosing the information.

(iii) The submitter has not previously disclosed the specific chemical identity to a local, State, or Federal government entity without asserting a confidentiality claim.

(2) The information is not required to be disclosed, or otherwise made available, to the public under any other Federal or State law.

(3) Disclosure of the information is likely to cause substantial harm to the competitive position of such person. To support this conclusion, the facts asserted must show all of the following:

(i) *Either:* (A) Competitors do not know or the submitter is not aware that competitors know that the chemi-

whose identity is being claimed
e secret can be used in the fashion
the submitter uses it, and com-
tors cannot easily duplicate the
ific use of this chemical through
r own research and development
vities; or

) Competitors are not aware or
submitter does not know whether
petitors are aware that the sub-
er is using this chemical in this
ion.

) The fact that the submitter man-
tures, imports or otherwise uses
chemical in a particular fashion is
contained in any publication or
r information source (of which
submitter is aware) available to
petitors or the public.

i) The non-confidential version of
submission under this title does
contain sufficient information to
le competitors to determine the
ific chemical identity withheld
efrom.

) The information referred to in
graph (a)(3)(i)(A) of this section,
value to competitors.

) Competitors are likely to use this
rmation to the economic detri-
t of the submitter and are not pre-
ed from doing so by a United
es patent.

) The resulting harm to submit-
competitive position would be
tantial.

) The chemical identity is not
ily discoverable through reverse
neering. To support this conclu-
, the facts asserted must show that
petitors cannot readily discover
specific chemical identity by anal-
of the submitter's products or en-
nmental releases.

) The sufficiency of the trade se-
y claim shall be decided entirely
the information submitted under
0.7, or § 350.11(a)(2)(ii).

.15 Public petitions requesting disclo-
sure of chemical identity claimed as
rade secret.

) The public may request the dis-
ure of chemical identity claimed as
e secret by submitting a written
tion to the address specified in
0.16.

) The petition shall include:

(1) The name, address, and telephone number of the petitioner;

(2) The name and address of the company claiming the chemical identity as trade secret; and

(3) A copy of the submission in which the submitter claimed chemical identity as trade secret, with a specific indication as to which chemical identity the petitioner seeks disclosed.

(c) EPA shall acknowledge, by letter to the petitioner, the receipt of the petition.

(d) Incomplete petitions. If the information contained in the petition is not sufficient to allow EPA to identify which chemical identity the petitioner is seeking to have released, EPA shall notify the petitioner that the petition cannot be further processed until additional information is furnished. EPA will make every reasonable effort to assist a petitioner in providing sufficient information for EPA to identify the chemical identity the petitioner is seeking to have released.

(e) EPA shall make a determination on a petition requesting disclosure, in accordance with § 350.11 and § 350.17, within nine months of receipt of such petition.

§ 350.16 Address to send trade secrecy claims and petitions requesting disclosure.

All claims of trade secrecy under sections 303 (d)(2), (d)(3), 311, 312, and 313 and all public petitions requesting disclosure of chemical identities claimed as trade secret should be sent to the following address: U.S. Environmental Protection Agency, Emergency Planning and Community Right-to-Know Program, P.O. Box 70266, Washington, DC 20024-0266.

§ 350.17 Appeals.

(a) *Procedure for filing appeal.* A submitter may appeal an EPA determination under §§ 350.11 (a)(2)(i) or (b)(2)(i), by filing an appeal with the General Counsel. The appeal shall be addressed to: The Office of General Counsel, U.S. Environmental Protection Agency, Contracts and Information Law Branch, Room 3600M, LE-132G, 401 M Street, SW., Washington, DC 20460.

The appeal shall contain the following:

(1) A letter requesting review of the appealed decision; and

(2) A copy of the letter containing EPA's decision upon which appeal is requested.

(b) Appeal of determination of insufficient claim.

(1) Where a submitter appeals a determination by EPA under § 350.11(a)(2)(i) that the trade secrecy claim presents insufficient support for a finding of trade secrecy, the General Counsel shall make one of the following determinations:

(i) The trade secrecy claim at issue meets the standards of sufficiency set forth in § 350.13; or

(ii) The trade secrecy claim at issue does not meet the standards of sufficiency set forth in § 350.13.

(2) If the General Counsel reverses the decision made by the EPA office handling the claim, the claim shall be processed according to § 350.11(a)(1). The General Counsel shall notify the submitter of the determination on appeal in writing, by certified mail (return receipt requested). The appeal determination shall include the date the appeal was received by the General Counsel, a statement of the decision appealed from, a statement of the decision on appeal and the reasons for such decision.

(3) If the General Counsel upholds the determination of insufficiency made by the EPA office handling the claim, the submitter may seek review in U.S. District Court within 30 days after receipt of notice of the General Counsel's determination. The General Counsel shall notify the submitter of its determination on appeal in writing, by certified mail (return receipt requested). The appeal determination shall include the date the appeal was received by the General Counsel, a statement of the decision appealed from, a statement of the decision on appeal and the reasons for such decision, and a statement of the submitter's right to seek review in U.S. District Court within 30 days of receipt of such notice. The petitioner shall be notified by regular mail.

(c) *Appeal of determination of no trade secret.* (1) If a submitter appeals from a determination by EPA under § 350.11(b)(2) that the specific chemical identity at issue is not a trade secret, the General Counsel shall make one of the following determinations:

(i) The assertions supporting the claim of trade secrecy are true and the chemical identity is a trade secret; or

(ii) The assertions supporting the claim of trade secrecy are not true and the chemical identity is not a trade secret.

(2) If the General Counsel reverses the decision made by the EPA office handling the claim, the General Counsel shall notify the submitter of its determination on appeal in writing, by certified mail (return receipt requested). The appeal determination shall include the date the appeal was received by the General Counsel, a statement of the decision appealed from, a statement of the decision on appeal and the reasons for such decision. The General Counsel shall send the petitioner the notice required in § 350.11(b)(1).

(3) If the General Counsel upholds the decision of the EPA office which made the trade secret determination, the submitter may seek review in U.S. District Court within 30 days of receipt of notice of the General Counsel's decision. The General Counsel shall notify the submitter of the determination on appeal in writing, by certified mail (return receipt requested). The notice shall include the date the appeal was received by the General Counsel, a statement of the decision appealed from, the basis for the appeal determination, that it constitutes final Agency action concerning the chemical identity trade secrecy claim, and that such final Agency action may be subject to review in U.S. District Court within 30 days of receipt of such notice. The General Counsel shall notify the petitioner by regular mail.

§ 350.18 Release of chemical identity determined to be non-trade secret; notice of intent to release chemical identity.

(a) Where a submitter fails to seek review within U.S. District Court within 20 days of receiving notice of a

rmination of the General Counsel
er § 350.17(b)(3) of this subpart
the trade secrecy claim is insuffi-
t, or under § 350.17(c)(3) of this
part that chemical identity claimed
rade secret is not entitled to trade
et protection, EPA may furnish
ce of intent to disclose the chemi-
identity claimed as trade secret
in 10 days by furnishing the sub-
er with the notice set forth in
graph (d) of this section by certi-
mail (return receipt requested).

) Where a submitter fails to seek
ew within U.S. District Court
in 20 days of receiving notice of
EPA determination under
0.11(a)(2)(iv)(B), or
0.11(a)(2)(v) of this regulation, or
to pursue appeal to the General
nsel within 20 days after being no-
d of its right to do so under
0.11(a)(2)(i) or § 350.11(b)(2)(i),
may furnish notice of intent to
ose the chemical identity claimed
rade secret within 10 days by fur-
ing the submitter with the notice
forth in paragraph (d) of this sec-
by certified mail (return receipt
ested).

) Where EPA, upon initial review
er § 350.9(d), determines that the
nical identity claimed as trade
et in a submittal submitted pursu-
to this part is the subject of a
r final Agency determination con-
ing a claim of trade secrecy for
same chemical identity for the
e facility, in which such claim was
invalid, EPA shall furnish notice
ntent to disclose chemical identity
in 10 days by furnishing the sub-
er with the notice set forth in
graph (d) of this section by certi-
mail (return receipt requested).

) EPA shall furnish notice of its
nt to release chemical identity
ned as trade secret by sending the
wing notification to submitters,
er the circumstances set forth in
graphs (a), (b), and (c) of this sec-
. The notice shall state that EPA
make the chemical identity avail-
to the petitioner and the public
the tenth working day after the
of the submitter's receipt of writ-
notice (or on such later date as the
ce of General Counsel may estab-
), unless the Office of General Counsel has first been notified of the submitter's commencement of an action in Federal court to obtain judicial review of the determination at issue, and to obtain preliminary injunctive relief against disclosure, or, where applicable, as described in paragraph (b) of this section, of commencement of an appeal to the General Counsel. The notice shall further state that if Federal court action is timely commenced, EPA may nonetheless make the information available to the petitioner and the public (in the absence of an order by the court to the contrary), once the court has denied a motion for a preliminary injunction in the action or has otherwise upheld the EPA determination, or, that if Federal court action or appeal to the General Counsel is timely commenced, EPA may nonetheless make the information available to the petitioner and the public whenever it appears to the General Counsel, after reasonable notice to the submitter, that the submitter is not taking appropriate measures to obtain a speedy resolution of the action.

§ 350.19 Provision of information to States.

(a) Any State may request access to trade secrecy claims, substantiations, supplemental substantiations, and additional information submitted to EPA. EPA shall release this information, even if claimed confidential, to any State requesting access if:

(1) The request is in writing;

(2) The request is from the Governor of the State; and

(3) The State agrees to safeguard the information with procedures equivalent to those which EPA uses to safeguard the information.

(b) The Governor of a State which receives access to trade secret information under this section may disclose such information only to State employees.

§ 350.21 Adverse health effects.

The Governor or State emergency response commission shall identify the adverse health effects associated with each of the chemicals claimed as trade secret and shall make this information available to the public. The material safety data sheets submitted to the State emergency response commissions may be used for this purpose.

§ 350.23 Disclosure to authorized representatives.

(a) Under section 322(f) of the Act, EPA possesses the authority to disclose to any authorized representative of the United States any information to which this section applies, notwithstanding the fact that the information might otherwise be entitled to trade secret or confidential treatment under this part. Such authority may be exercised only in accordance with paragraph (b) of this section.

(b)(1) A person under contract or subcontract to EPA or a grantee who performs work for EPA in connection with Title III or regulations which implement Title III may be considered an authorized representative of the United States for purposes of this § 350.23. Subject to the limitations in this § 350.23(b), information to which this section applies may be disclosed to such a person if the EPA program office managing the contract, subcontract, or grant first determines in writing that such disclosure is necessary in order that the contractor, subcontractor or grantee may carry out the work required by the contract, subcontract or grant.

(2) No information shall be disclosed under this § 350.23(b) unless this contract, subcontract, or grant in question provides:

(i) That the contractor, subcontractor or the grantee and the contractor's, subcontractor's, or grantee's employees shall use the information only for the purpose of carrying out the work required by the contract, subcontract, or grant, and shall refrain from disclosing the information to anyone other than EPA without the prior written approval of each affected submitter or of an EPA legal office, and shall return to EPA all copies of the information (and any abstracts or extracts therefrom) upon request by the EPA program office, whenever the information is no longer required by the contractor, subcontractor or grantee for the performance of the work required under the contract, subcontract or grant, or upon completion of the contract, subcontract or grant;

(ii) That the contractor, subcontractor or grantee shall obtain a written agreement to honor such terms of the contract or subcontract from each of the contractor's, subcontractor's or grantee's employees who will have access to the information, before such employee is allowed such access; and

(iii) That the contractor, subcontractor or grantee acknowledges and agrees that the contract, subcontract or grant provisions concerning the use and disclosure of confidential business information are included for the benefit of, and shall be enforceable by, both EPA and any covered facility having an interest in information concerning it supplied to the contractor, subcontractor or grantee by EPA under the contract or subcontract or grant.

(3) No information shall be disclosed under this § 350.23(b) until each affected submitter has been furnished notice of the contemplated disclosure by the EPA program office and has been afforded a period found reasonable by that office (not less than 5 working days) to submit its comments. Such notice shall include a description of the information to be disclosed, the identity of the contractor, subcontractor or grantee, the contract, subcontract or grant number, if any, and the purposes to be served by the disclosure. This notice may be published in the FEDERAL REGISTER or may be sent to individual submitters.

(4) The EPA program office shall prepare a record of disclosures under this § 350.23(b). The EPA program office shall maintain the record of disclosure and the determination of necessity prepared under paragraph (b)(1) of this section for a period of not less than 36 months after the date of the disclosure.

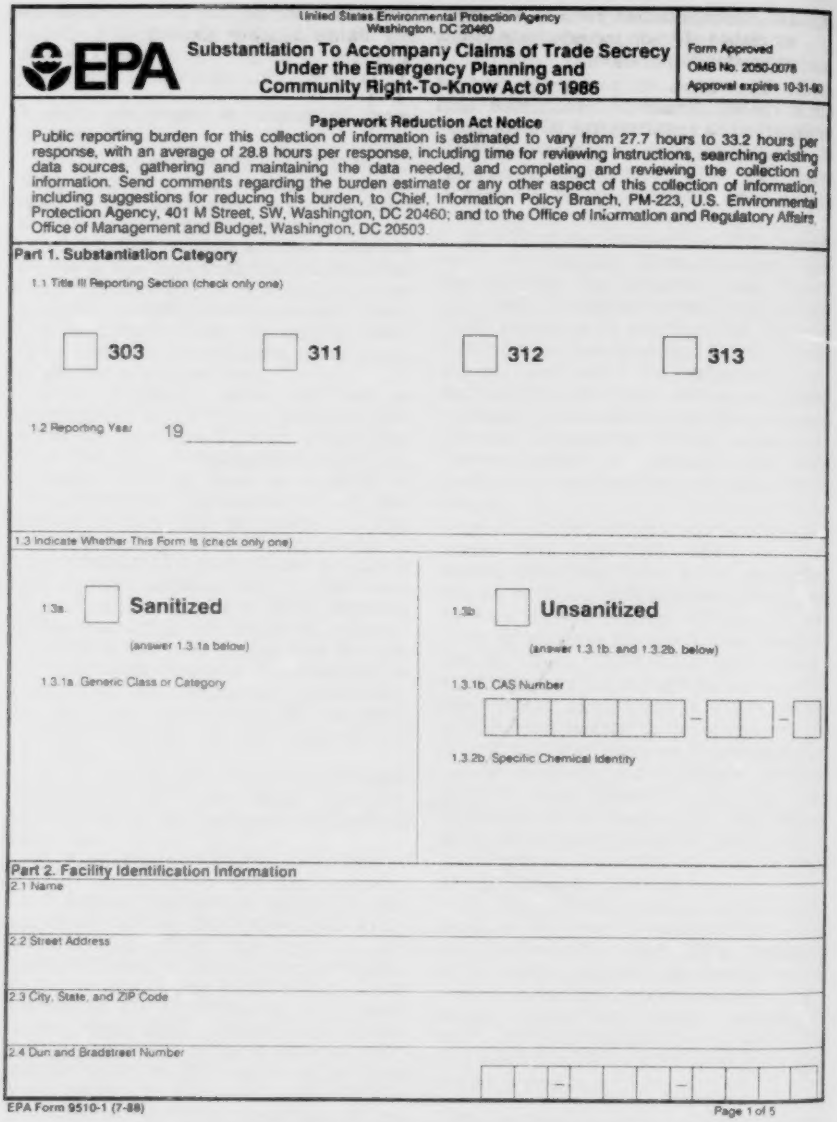
§ 350.25 Disclosure in special circumstances.

Other disclosure of specific chemical identity may be made in accordance with 40 CFR 2.209.

7 Substantiation form to accompa- claims of trade secrecy, instructions substantiation form.

The form in paragraph (b) of ection must be completed and tted as required in § 350.7(a).

(b) Substantiation form to accompany claims of trade secrecy.



United States Environmental Protection Agency
Washington, DC 20460

EPA

Substantiation To Accompany Claims of Trade Secrecy Under the Emergency Planning and Community Right-To-Know Act of 1986

Form Approved
OMB No. 2050-0078
Approval expires 10-31-90

Paperwork Reduction Act Notice

Public reporting burden for this collection of information is estimated to vary from 27.7 hours to 33.2 hours per response, with an average of 28.8 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

Part 1. Substantiation Category

1.1 Title III Reporting Section (check only one)

☐ 303 ☐ 311 ☐ 312 ☐ 313

1.2 Reporting Year 19______

1.3 Indicate Whether This Form is (check only one)

1.3a. ☐ **Sanitized**

(answer 1.3.1a below)

1.3.1a. Generic Class or Category

1.3b. ☐ **Unsanitized**

(answer 1.3.1b. and 1.3.2b. below)

1.3.1b. CAS Number

☐☐☐☐☐☐ – ☐☐ – ☐

1.3.2b. Specific Chemical Identity

Part 2. Facility Identification Information

2.1 Name

2.2 Street Address

2.3 City, State, and ZIP Code

2.4 Dun and Bradstreet Number

☐☐ – ☐☐☐ – ☐☐☐☐

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3. Responses to Substantiation Questions

Describe the specific measures you have taken to safeguard the confidentiality of the chemical identity claimed as trade secret, and indicate whether these measures will continue in the future.

Have you disclosed the information claimed as trade secret to any other person (other than a member of a local emergency planning committee, officer or employee of the United States or a State or local government, or your employee) who is not bound by a confidentiality agreement to refrain from disclosing this trade secret information to others?

☐ **Yes** ☐ **No**

List all local, State, and Federal government entities to which you have disclosed the specific chemical identity. For each, indicate whether you asserted a confidentiality claim for the chemical identity and whether the government entity denied that claim.

Government Entity	Confidentiality Claim Asserted		Confidentiality Claim Denied	
	Yes	No	Yes	No

3.4 In order to show the validity of a trade secrecy claim, you must identify your specific use of the chemical claimed as trade secret and explain why it is a secret of interest to competitors. Therefore:

(i) Describe the specific use of the chemical claimed as trade secret, identifying the product or process in which it is used. (If you use the chemical other than as a component of a product or in a manufacturing process, identify the activity where the chemical is used.)

(ii) Has your company or facility identity been linked to the specific chemical identity claimed as trade secret in a patent, or in publications or other information sources available to the public or your competitors (of which you are aware)?

☐ **Yes** ☐ **No**

If so, explain why this knowledge does not eliminate the justification for trade secrecy.

(iii) If this use of the chemical claimed as trade secret is unknown outside your company, explain how your competitors could deduce this use from disclosure of the chemical identity together with other information on the Title III submittal form.

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) Explain why your use of the chemical claimed as trade secret would be valuable information to your competitors.

Indicate the nature of the harm to your competitive position that would likely result from disclosure of the specific chemical identity, and indicate why such harm would be substantial.

To what extent is the chemical claimed as trade secret available to the public or your competitors in products, articles, or environmental releases?

3.6 (ii) Describe the factors which influence the cost of determining the identity of the chemical claimed as trade secret by chemical analysis of the product, article, or waste which contains the chemical (e.g., whether the chemical is in pure form or is mixed with other substances).

Part 4. Certification (Read and sign after completing all sections)

I certify under penalty of law that I have personally examined the information submitted in this and all attached documents. Based on my inquiry of those individuals responsible for obtaining the information, I certify that the submitted information is true, accurate, and complete, and that those portions of the substantiation claimed as confidential would, if disclosed, reveal the chemical identity being claimed as a trade secret, or would reveal other confidential business or trade secret information. I acknowledge that I may be asked by the Environmental Protection Agency to provide further detailed factual substantiation relating to this claim of trade secrecy, and certify to the best of my knowledge and belief that such information is available. I understand that if it is determined by the Administrator of EPA that this trade secret claim is frivolous, EPA may assess a penalty of up to $25,000 per claim.

I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

4.1 Name and official title of owner or operator or senior management official	
4.2 Signature *(All signatures must be original)*	4.3 Date Signed

EPA Form 9510-1 (7-88) Page 5 of 5

RUCTIONS FOR COMPLETING THE PA TRADE SECRET SUBSTANTIATION ORM

General Information

PA requires that the information
uested in a trade secret substantia-
ı be completed using this substan-
ion form in order to ensure that all
lity and chemical identifier infor-
ion, substantiation questions, and
ification statements are complet-
Submitter-devised forms will not
accepted. Incomplete substantia-
s will in all likelihood be found in-
icient to support the claim, and
claim will be denied. *Moreover, the*
ute provides that a submitter who
s to provide information required
be subject to a $10,000 fine. For
submitter's own protection, there-
, the EPA form must be used and
pleted in its entirety.

he statute for section 322 estab-
es a two-phase process in which
submitter must do the following:

At the time a report is submitted,
submitter must present a complete
of assertions that (if true) would
sufficient to justify the claim of
de secrecy; and

If the claim is reviewed by EPA,
submitter will be asked to provide
itional factual information suffi-
nt to establish the truthfulness of
assertions made at the time the
m was made.

n making its assertions of trade se-
cy, a submitter should provide,
ere applicable, descriptive factual
tements. Conclusory statements of
npliance (such as positive or nega-
restatements of the questions)
y not provide EPA with enough in-
mation to make a determination
l may be found insufficient to sup-
t a claim.

What May Be Withheld

nly the specific chemical identity
uired to be disclosed in sections
, 311, 312, and 313 submissions may
claimed trade secret on the Title III
mittal itself. (Other trade secret or
fidential business information in-
ded in answer to a question on the
stantiation may be claimed trade
ret or confidential, as described
ow.)

Location information claimed as confidential under section 312(d)(2)(F) should *not* be sent to EPA; this should only be sent to the SERC, LEPC, and the fire department, as requested.

Sanitized and Unsanitized Copies

You must submit this form to EPA in sanitized and unsanitized versions, along with the sanitized and unsanitized copies of the submittal that gives rise to this trade secrecy claim (except for the section 303 submittal, and for MSDSs under section 311). The *unsanitized* version of this form contains specific chemical identity and CAS number and may contain other trade secret or confidential business information, which should be clearly labeled as such. Failure to claim other information trade secret or confidential will make that information publicly available. In the *sanitized* version of this form, the specific chemical identity and CAS number must be replaced with the chemical's generic class or category and any other trade secret or confidential business information should be deleted. *You should also send sanitized copies of the submittal and this form to relevant State and local authorities.*

Each question on this form must be answered. *Submitters are encouraged to answer in the space provided.* If you need more space to answer a particular question, please use additional sheets. If you use additional sheets, be sure to include the number (and if applicable, the subpart) of the question being answered and write your facility's Dun and Bradstreet Number on the lower right-hand corner of each sheet.

When the Forms Must be Submitted

The sanitized and unsanitized report forms and trade secret substantiations must be submitted to EPA by the normal reporting deadline for that section (e.g., section 313 submissions for any calendar year must be submitted on or before July 1 of the following year).

Where to Send the Trade Secrecy Claim

All trade secrecy claims should be sent to the following address: U.S. Environmental Protection Agency, Emergency Planning and Community Right-to-Know Program, P.O. Box 70266, Washington, DC 20024-0266.

In addition, you must send sanitized copies of the report form and substantiation to relevant State and local authorities. States will provide addresses where the copies of the reports are to be sent.

Packaging of Claim(s)

A completed section 322 claim package must include four items, packaged in the following order:

1. An unsanitized trade secret substantiation form.
2. A sanitized trade secret substantiation form.
3. An unsanitized 312 or 313 report (it is not necessary to create an unsanitized section 303 submittal or MSDS for submission under section 311).
4. A sanitized (public) section 303, 311, 312, or 313 or report.

It is important to securely fasten together (binder clip or rubber band) each of the reporting forms and substantiations for the particular chemical being claimed trade secret. This process will make it clear that a claim is physically complete when submitted. When submitters submit claims for more than one chemical, EPA requests that the four parts associated with each chemical be assembled as a set and each set for different chemicals be kept separate within the package sent to EPA. Following these guidelines permits the Agency to make the appropriate determinations of trade secrecy, and to make public only those portions of each submittal required to be disclosed.

How to Obtain Forms and Other Information

Additional copies of the Trade Secret Substantiation Form may be obtained by writing to: Emergency Planning and Community Right-to-Know Program, U.S. Environmental Protection Agency, WH-562A, 401 M Street, SW., Washington, DC 20460.

Instructions for Completing Specific Sections of the Form

Part 1. Substantiation Category

1.1 Title III Reporting Section. Check the box corresponding to the section for which this particular claim of trade secrecy is being made. Checking off more than one box for a claim is *not* permitted.

1.2 Reporting Year. Enter the year to which the reported information applies, not the year in which you are submitting the report.

1.3a Sanitized. If this copy of the submission is the "public" or sanitized version, check this box and complete 1.3.1a. which asks for generic class or category. Do *not* complete the information required in the unsanitized box (1.3b.).

1.3.1a Generic Class or Category. You must complete this if you are claiming the specific chemical identity as a trade secret and have marked the box in 1.3a. The generic chemical name must be structurally descriptive of the chemical.

1.3b Unsanitized. Check the box if this version of the form contains the specific chemical identity or any other trade secret or confidential business information.

1.3.1b CAS Number. You must enter the Chemical Abstract Service (CAS) registry number that appears in the appropriate section of the rule for the chemical being reported. Use leading place holding zeros. If you are reporting a chemical category (e.g., copper compounds), enter N/A in the CAS number space.

1.3.2b Specific Chemical Identity. Enter the name of the chemical or chemical category as it is listed in the appropriate section of the reporting rule.

Part 2. Facility Identification Information

2.1-2.3 Facility Name and Location. You must enter the name of your facility (plant site name or appropriate facility designation), street address, city, State and ZIP Code in the space provided. You may not use a post office box number for this location.

4 Dun and Bradstreet Number.
u must enter the number assigned
Dun and Bradstreet for your facili-
or each establishment within your
lity. If the establishment does not
e a D & B number, enter N/A in
boxes reserved for those numbers.
leading place holding zeros.

art 3. Responses to Substantiation Questions

he six questions posed in this form
based on the four statutory crite-
found in section 322(b) of Title III.
e information you submit in re-
nse to these questions is the basis
EPA's initial determination as to
ether the substantiation is suffi-
nt to support a claim of trade secre-
EPA has indicated in § 350.13 of
final rule the specific criteria that
egards as the legal basis for evalu-
ng whether the answers you have
vided are sufficient to warrant pro-
tion of the chemical identity. You
urged to review those criteria
ore preparing answers to the ques-
ns on the form.

Part 4. Certification

n *original* signature is required for
h trade secret substantiation sub-
ted to EPA, both sanitized and un-
itized. It indicates the submitter is
tifying that the particular substan-
tion provided to EPA is complete,
e, and accurate, and that it is in-
ded to support the specific trade
ret claim being made. Noncompli-
e with this certification require-
nt may jeopardize the trade secret
im.

.1 Name and Official Title. Print or
e the name and title of the person
o signs the statement at 4.2.

.2 Signature. This certification
st be signed by the owner or opera-
, or a senior official with manage-
nt responsibility for the person (or
sons) completing the form. An
ginal signature is required for each
de secret substantiation submitted
EPA, both sanitized and unsani-
ed. Since the certification applies to
information supplied on the forms,
should be signed only after the sub-
ntiation has been completed.

.3 Date. Enter the date when the
tification was signed.

APPENDIX A TO SUBPART A—RESTATEMENT OF TORTS SECTION 757, COMMENT b

b. Definition of trade secret. A trade secret may consist of any formula, pattern, device or compilation of information which is used in one's business, and which gives him an opportunity to obtain an advantage over competitors who do not know or use it. It may be a formula for a chemical compound, a process of manufacturing, treating or preserving materials, a pattern for a machine or other device, or a list of customers. It differs from other secret information in a business (see section 759) in that it is not simply information as to single or ephemeral events in the conduct of the business, as, for example, the amount or other terms of a secret bid for a contract or the salary of certain employees, or the security investments made or contemplated, or the date fixed for the announcement of a new policy or for bringing out a new model or the like. A trade secret is a process or device for continuous use in the operation of the business. Generally it relates to the production of goods, as, for example, a machine or formula for the production of an article. It may, however, relate to the sale of goods or to other operations in the business, such as a code for determining discounts, rebates or other concessions in a price list or catalogue, or a list of specialized customers, or a method of bookkeeping or other office management.

Secrecy. The subject matter of a trade secret must be secret. Matters of public knowledge or of general knowledge in an industry cannot be appropriated by one as his secret. Matters which are completely disclosed by the goods which one markets cannot be his secret. Substantially, a trade secret is known only in the particular business in which it is used. It is not requisite that only the proprietor of the business know it. He may, without losing his protection, communicate it to employees involved in its use. He may likewise communicate it to others pledged to secrecy. Others may also know of it independently, as, for example, when they have discovered the process or formula by independent invention and are keeping it secret. Nevertheless, a substantial element of secrecy must exist, so that, except by the use of improper means, there would be difficulty in acquiring the information. An exact definition of a trade secret is not possible. Some factors to be considered in determining whether given information is one's trade secret are: (1) The extent to which the information is known outside of his business; (2) the extent to which it is known by employees and others involved in his business; (3) the extent of measures taken by him to guard the secrecy of the information; (4) the value of the information to him and to his competitors; (5) the amount of effort or money expended by him in developing the information; (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.

Novelty and prior art. A trade secret may be a device or process which is patentable; but it need not be that. It may be a device or process which is clearly anticipated in the prior art or one which is merely a mechanical improvement that a good mechanic can make. Novelty and invention are not requisite for a trade secret as they are for patentability. These requirements are essential to patentability because a patent protects against unlicensed use of the patented device or process even by one who discovers it properly through independent research. The patent monopoly is a reward to the inventor. But such is not the case with a trade secret. Its protection is not based on a policy of rewarding or otherwise encouraging the development of secret processes or devices. The protection is merely against breach of faith and reprehensible means of learning another's secret. For this limited protection it is not appropriate to require also the kind of novelty and invention which is a requisite of patentability. The nature of the secret is, however, an important factor in determining the kind of relief that is appropriate against one who is subject to liability under the rule stated in this section. Thus, if the secret consists of a device or process which is a novel invention, one who acquires the secret wrongfully is ordinarily enjoined from further use of it and is required to account for the profits derived from his past use. If, on the other hand, the secret consists of mechanical improvements that a good mechanic can make without resort to the secret, the wrongdoer's liability may be limited to damages, and an injunction against future use of the improvements made with the aid of the secret may be inappropriate.

Subpart B—Disclosure of Trade Secret Information to Health Professionals

§ 350.40 Disclosure to health professionals.

(a) *Definitions.* "Medical emergency" means any unforeseen condition which a health professional would judge to require urgent and unscheduled medical attention. Such a condition is one which results in sudden and/or serious symptom(s) constituting a threat to a person's physical or psychological well-being and which requires immediate medical attention to prevent possible deterioration, disability, or death.

(b) The specific chemical identity, including the chemical name of a hazardous chemical, extremely hazardous substance, or a toxic chemical, is made available to health professionals, in accordance with the applicable provisions of this section.

(c) *Diagnosis or Treatment by Health Professionals in Non-Emergency Situations.* (1) An owner or operator of a facility which is subject to the requirements of sections 311, 312, and 313, shall, upon request, provide the specific chemical identity, if known, of a hazardous chemical, extremely hazardous substance, or a toxic chemical to a health professional if:

(i) The request is in writing;

(ii) The request describes why the health professional has a reasonable basis to suspect that:

(A) The specific chemical identity is needed for purposes of diagnosis or treatment of an individual,

(B) The individual or individuals being diagnosed or treated have been exposed to the chemical concerned, and

(C) Knowledge of the specific chemical identity of such chemical will assist in diagnosis or treatment.

(iii) The request contains a confidentiality agreement which includes:

(A) A description of the procedures to be used to maintain the confidentiality of the disclosed information; and

(B) A statement by the health professional that he will not use the information for any purpose other than the health needs asserted in the statement of need authorized in paragraph (c)(1)(ii) of this section and will not release the information under any circumstances, except as authorized by the terms of the confidentiality agreement or by the owner or operator of the facility providing such information.

(iv) The request includes a certification signed by the health professional stating that the information contained in the statement of need is true.

(2) Following receipt of a written request, the facility owner or operator to whom such request is made shall pro-

e the requested information to the
lth professional promptly.

d) *Preventive Measures and Treat-*
nt by Local Health Professionals.
An owner or operator of a facility
ject to the requirements of sections
, 312, or 313 shall provide the spe-
c chemical identity, if known, of a
zardous chemical, an extremely haz-
ous substance, or a toxic chemical
any health professional (such as a
ysician, toxicologist, epidemiologist,
nurse) if:

) The requester is a local govern-
nt employee or a person under con-
ct with the local government;

i) The request is in writing;

ii) The request describes with rea-
able detail one or more of the fol-
ing health needs for the informa-
n:

A) To assess exposure of persons
ng in a local community to the haz-
s of the chemical concerned.

B) To conduct or assess sampling to
ermine exposure levels of various
ulation groups.

C) To conduct periodic medical sur-
llance of exposed population
ups.

D) To provide medical treatment to
osed individuals or population
ups.

E) To conduct studies to determine
health effects of exposure.

F) To conduct studies to aid in the
ntification of chemicals that may
sonably be anticipated to cause an
erved health effect.

v) The request contains a confiden-
ity agreement which includes:

A) A description of the procedures
be used to maintain the confiden-
ity of the disclosed information,
l

B) A statement by the health pro-
sional that he will not use the in-
mation for any purpose other than
health needs asserted in the state-
nt of need authorized in paragraph
1)(iii) of this section and will not
ease the information under any cir-
nstances except as may otherwise
authorized by the terms of such
eement or by the owner or operator
the facility person providing such
ormation.

) The request includes a certifica-
n signed by the health professional stating that the information contained in the statement of need is true.

(2) Following receipt of a written request, the facility owner or operator to whom such request is made shall promptly provide the requested information to the local health professional.

(e) *Medical Emergency.* (1) An owner or operator of a facility which is subject to the requirements of sections 311, 312, or 313 must provide a copy of a material safety data sheet, an inventory form, or a toxic chemical release form, including the specific chemical identity, if known, of a hazardous chemical, extremely hazardous substance, or a toxic chemical, to any treating physician or nurse who requests such information if the treating physician or nurse determines that:

(i) A medical emergency exists as to the individual or individuals being diagnosed or treated;

(ii) The specific chemical identity of the chemical concerned is necessary for or will assist in emergency or first-aid diagnosis or treatment; and,

(iii) The individual or individuals being diagnosed or treated have been exposed to the chemical concerned.

(2) Owners or operators of facilities must provide the specific chemical identity to the requesting treating physician or nurse immediately following the request, without requiring a written statement of need or a confidentiality agreement in advance.

(3) The owner or operator may require a written statement of need and a written confidentiality agreement as soon as circumstances permit. The written statement of need shall describe in reasonable detail the factors set forth in paragraph (e)(1) of this section. The written confidentiality agreement shall be in accordance with paragraphs (c)(1)(iii) and (f) of this section.

(f) *Confidentiality Agreement.* The confidentiality agreement authorized in paragraphs (c)(1)(iii), (d)(1)(iv) and (e)(3) of this section:

(i) May restrict the use of the information to the health purposes indicated in the written statement of need;

(ii) May provide for appropriate legal remedies in the event of a breach of the agreement; and

(iii) May not include requirements for the posting of a penalty bond.

(g) Nothing in this regulation is meant to preclude the parties from pursuing any non-contractual remedies to the extent permitted by law, or from pursuing the enforcement remedy provided in section 325(e) of Title III.

(h) The health professional receiving the trade secret information may disclose it to EPA only under the following circumstances: The health professional must believe that such disclosure is necessary in order to learn from the Agency additional information about the chemical necessary to assist him in carrying out the responsibilities set forth in paragraphs (c), (d), and (e) of this section. Such information comprises facts regarding adverse health and environmental effects.

PART 355—EMERGENCY PLANNING AND NOTIFICATION

Sec.
355.10 Purpose
355.20 Definitions
355.30 Emergency planning
355.40 Emergency release notification
355.50 Penalties

Appendix A—The List of Extremely Hazardous Substances, and their Threshold Planning Quantities (Alphabetical Order)

Appendix B—The List of Extremely Hazardous Substances and their Threshold Planning Quantities (CAS Number Order)

Authority: 42 U.S.C. 11002 and 11048.

Source: 52 FR 13395, Apr. 22, 1987, unless otherwise noted.

§ 355.10 Purpose.

This regulation establishes the list of extremely hazardous substances, threshold planning quantities, and facility notification responsibilities necessary for the development and implementation of State and local emergency response plans.

§ 355.20 Definitions.

Act means the Superfund Amendments and Reauthorization Act of 1986.

CERCLA means the Comprehensive Emergency Response, Compensation and Liability Act of 1980, as amended.

CERCLA Hazardous Substance means a substance on the list defined in section 101(14) of CERCLA.

Note: Listed CERCLA hazardous substances appear in Table 302.4 of 40 CFR Part 302.

Commission means the emergency response commission, or the Governor if there is no commission, for the State in which the facility is located.

Environment includes water, air, and land and the interrelationship which exists among and between water, air, and land and all living things.

Extremely hazardous substance means a substance listed in Appendices A and B of this part.

Facility means all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person). For purposes of emergency release notification, the term includes motor vehicles, rolling stock, and aircraft.

Hazardous chemical means any hazardous chemical as defined under § 1910.1200(c) of Title 29 of the Code of Federal Regulations, except that such term does not include the following substances:

(1) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration.

(2) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.

(3) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public.

(4) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual.

(5) Any substance to the extent it is
sed in routine agricultural operations
is a fertilizer held for sale by a re-
iler to the ultimate customer.

Mixture means a heterogenous asso-
ation of substances where the vari-
us individual substances retain their
entities and can usually be separated
y mechanical means. Includes solu-
ons or compounds but does not in-
ude alloys or amalgams.

Person means any individual, trust,
rm, joint stock company, corporation
ncluding a government corporation),
artnership, association, State, mu-
icipality, commission, political subdi-
ision of a State, or interstate body.

Release means any spilling, leaking,
umping, pouring, emitting, emptying,
ischarging, injecting escaping, leach-
ng, dumping, or disposing into the en-
ironment (including the abandon-
nent or discarding of barrels, contain-
rs, and other closed receptacles) of
ny hazardous chemical, extremely
azardous substance, or CERCLA haz-
rdous substance.

Reportable quantity means, for any
ERCLA hazardous substance, the re-
ortable quantity established in Table
02.4 of 40 CFR Part 302, for such sub-
tance, for any other substance, the
eportable quantity is one pound.

Threshold planning quantity means,
or a substance listed in Appendices A
nd B, the quantity listed in the
olumn "threshold planning quantity"
or that substance.

§ 355.30 Emergency planning.

(a) *Applicability.* The requirements of this section apply to any facility at which there is present an amount of any extremely hazardous substance equal to or in excess of its threshold planning quantity, or designated, after public notice and opportunity for comment, by the Commission or the Governor for the State in which the facility is located. For purposes of this section, an "amount of any extremely hazardous substance" means the total amount of an extremely hazardous substance present at any one time at a facility at concentrations greater than one percent by weight, regardless of location, number of containers, or method of storage.

(b) *Emergency planning notification.* The owner or operator of a facility subject to this section shall provide notification to the Commission that it is a facility subject to the emergency planning requirements of this Part. Such notification shall be provided: on or before May 17, 1987 or within sixty days after a facility first becomes subject to the requirements of this section, whichever is later.

(c) *Facility emergency coordinator.* The owner or operator of a facility subject to this section shall designate a facility representative who will participate in the local emergency planning process as a facility emergency response coordinator. The owner or operator shall notify the local emergency planning committee (or the Governor if there is no committee) of the facility representative on or before September 17, 1987 or 30 days after establishment of a local emergency planning committee, whichever is earlier.

(d) *Provision of information.* (1) The owner or operator of a facility subject to this section shall inform the local emergency planning committee of any changes occurring at the facility which may be relevant to emergency planning.

(2) Upon request of the local emergency planning committee, the owner or operator of a facility subject to this section shall promptly provide to the committee any information necessary for development or implementation of the local emergency plan.

(e) *Calculation of TPQs for solids and mixtures.* (1) If a container or storage vessel holds a mixture or solution of an extremely hazardous substance, then the concentration of extremely hazardous substance, in weight percent (greater than 1%), shall be multiplied by the mass (in pounds) in the vessel to determine the actual quantity of extremely hazardous substance therein.

(2)(i) Extremely hazardous substances that are solids are subject to either of two threshold planning quantities as shown on Appendices A and B (i.e., 500/10,000 pounds). The lower quantity applies only if the solid exists in powdered form and has a particle size less than 100 microns; or is handled in solution or in molten form; or meets the criteria for a National Fire Protection Association (NFPA) rating of 2, 3 or 4 for reactivity. If the solid does not meet any of these criteria, it is subject to the upper (10,000 pound) threshold planning quantity as shown in Appendices A and B.

(ii) The 100 micron level may be determined by multiplying the weight percent of solid with a particle size less than 100 microns in a particular container by the quantity of solid in the container.

(iii) The amount of solid in solution may be determined by multiplying the weight percent of solid in the solution in a particular container by the quantity of solution in the container.

(iv) The amount of solid in molten form must be multipled by 0.3 to determine whether the lower threshold planning quantity is met.

(Approved by the Office of Management and Budget under control number 2050-0046)

§ 355.40 Emergency release notification.

(a) *Applicability.* (1) The requirements of this section apply to any facility: (i) at which a hazardous chemical is produced, used or stored and (ii) at which there is release of a reportable quantity of any extremely hazardous substance or CERCLA hazardous substance.

(2) This section does not apply to:

(i) Any release which results in exposure to persons solely within the boundaries of the facility;

(ii) Any release which is a "federally permitted release" as defined in section 101 (10) of CERCLA;

(iii) Any release which is "continuous," as defined under section 103 (f) of CERCLA (except for "statistically significant increases" as defined under section 103(e) of CERCLA; and

(iv) Any release of a pesticide product exempt from CERCLA section 103(a) reporting under section 103(e) of CERCLA;

(v) Any release not meeting the definition of release under Section 101(22) of CERCLA, and therefore exempt from Section 103(a) reporting; and

(vi) Any radionuclide release which occurs (A) naturally in soil from land holdings such as parks, golf courses, or other large tracts of land; (B) naturally from the disturbance of land for purposes other than mining, such as for agricultural or construction activities; (C) from the dumping of coal and coal ash at utility and industrial facilities with coal-fired boilers; and (D) from coal and coal ash piles at utility and industrial facilities with coal-fired boilers.

Note to paragraph (a): Releases of CERCLA hazardous substances are subject to the release reporting requirements of CERCLA section 103, codified at 40 CFR Part 302, in addition to the requirements of this part.

(b) *Notice requirements.* (1) The owner or operator of a facility subject to this section shall immediately notify the community emergency coordinator for the local emergency planning committee of any area likely to be affected by the release and the State emergency response commission of any State likely to be affected by the release. If there is no local emergency planning committee, notification shall be provided under this section to relevant local emergency response personnel.

(2) The notice required under this section shall include the following to the extent known at the time of notice and so long as no delay in notice or emergency response results:

(i) The chemical name or identity of any substance involved in the release.

(ii) An indication of whether the substance is an extremely hazardous substance.

(iii) An estimate of the quantity of any such substance that was released into the environment.

(iv) The time and duration of the release.

(v) The medium or media into which the release occurred.

(vi) Any known or anticipated acute or chronic health risks associated with the emergency and, where appropriate, advice regarding medical attention necessary for exposed individuals.

(vii) Proper precautions to take as a result of the release, including evacuation (unless such information is readily available to the community emergency coordination pursuant to the emergency plan).

(viii) The names and telephone number of the person or persons to be contacted for further information.

(3) As soon as practicable after a release which requires notice under (b)(1) of this section, such owner or operator shall provide a written follow-up emergency notice (or notices, as more information becomes available) setting forth and updating the information required under paragraph (b)(2) of this section, and including additional information with respect to:

(i) Actions taken to respond to and contain the release,

(ii) Any known or anticipated acute or chronic health risks associated with the release, and,

(iii) Where appropriate, advice regarding medical attention necessary for exposed individuals.

(4) *Exceptions.* (i) Until April 30, 1988, in lieu of the notice specified in paragraph (b)(2) of this section, any owner or operator of a facility subject to this section from which there is a release of a CERCLA hazardous substance which is not an extremely hazardous substance and has a statutory reportable quantity may provide the same notice required under CERCLA section 103(a) to the local emergency planning committee.

(ii) An owner or operator of a facility from which there is a transportation-related release may meet the requirements of this section by providing the information indicated in paragraph (b)(2) to the 911 operator, or in the absence of a 911 emergency telephone number, to the operator. For purposes of this paragraph, a "transportation-related release" means a release during transportation, or storage incident to transportation if the stored substance is moving under active shipping papers and has not reached the ultimate consignee.

(Approved by the Office of Management and Budget under control number 2050-0046)

[52 FR 13395, Apr. 22, 1987, as amended at 54 FR 22543, May 24, 1989]

EFFECTIVE DATE NOTE: At 54 FR 22543, May 24, 1989, § 355.40 was amended by adding paragraphs (a)(2) (v) and (vi) revising paragraph (a)(2)(iv) and republishing (a)(2) introductory text, effective July 24, 1989. For the convenience of the user, the superseded text follows.

§ 355.40 Emergency release notification.

(a) * * *

(2) * * *

(iv) Any release exempt from CERCLA section 103(a) reporting under section 101(22) of CERCLA.

* * * * *

§ 355.50 Penalties.

(a) *Civil penalties.* Any person who fails to comply with the requirements of § 355.40 shall be subject to civil penalties of up to $25,000 for each violation in accordance with section 325(b)(1) of the Act.

(b) *Civil penalties for continuing violations.* Any person who fails to comply with the requirements of § 355.40 shall be subject to civil penalties of up to $25,000 for each day during which the violation continues, in accordance with section 325(b)(2) of the Act. In the case of a second or subsequent violation, any such person may be subject to civil penalties of up to $75,000 for each day the violation continues, in accordance with section 325(b)(2) of the Act.

(c) *Criminal penalties.* Any person who knowingly and willfully fails to provide notice in accordance with § 355.40 shall, upon conviction, be fined not more than $25,000 or imprisoned for not more than two (2) years, or both (or, in the case of a second or subsequent conviction, shall be fined not more than $50,000 or imprisoned for not more than five (5) years, or both) in accordance with section 325(b)(4) of the Act.

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
75-86-5	Acetone Cyanohydrin		10	1,000
1752-30-3	Acetone Thiosemicarbazide	e	1	1,000/10,000
107-02-8	Acrolein		1	500
79-06-1	Acrylamide	d, l	5,000	1,000/10,000
107-13-1	Acrylonitrile	d, l	100	10,000
814-68-6	Acrylyl Chloride	e, h	1	100
111-69-3	Adiponitrile	e, l	1	1,000
116-06-3	Aldicarb	c	1	100/10,000
309-00-2	Aldrin	d	1	500/10,000
107-18-6	Allyl Alcohol		100	1,000
107-11-9	Allylamine	e	1	500
20859-73-8	Aluminum Phosphide	b	100	500
54-62-6	Aminopterin	e	1	500/10,000
78-53-5	Amiton	e	1	500
3734-97-2	Amiton Oxalate	e	1	100/10,000
7664-41-7	Ammonia	l	100	500
300-62-9	Amphetamine	e	1	1,000
62-53-3	Aniline	d, l	5,000	1,000
88-05-1	Aniline, 2,4,6-Trimethyl-	e	1	500
7783-70-2	Antimony Pentafluoride	e	1	500
1397-94-0	Antimycin A	c, e	1	1,000/10,000
86-88-4	ANTU		100	500/10,000
1303-28-2	Arsenic Pentoxide	d	5,000	100/10,000
1327-53-3	Arsenous Oxide	d, h	5,000	100/10,000
7784-34-1	Arsenous Trichloride	d	5,000	500
7784-42-1	Arsine	e	1	100
2642-71-9	Azinphos-Ethyl	e	1	100/10,000
86-50-0	Azinphos-Methyl		1	10/10,000
98-87-3	Benzal Chloride	d	5,000	500
98-16-8	Benzenamine, 3-(Trifluoromethyl)-	e	1	500
100-14-1	Benzene, 1-(Chloromethyl)-4-Nitro-	e	1	500/10,000
98-05-5	Benzenearsonic Acid	e	1	10/10,000
3615-21-2	Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	e, g	1	500/10,000
98-07-7	Benzotrichloride	d	1	100
100-44-7	Benzyl Chloride	d	100	500
140-29-4	Benzyl Cyanide	e, h	1	500
15271-41-7	Bicyclo[2.2.1]Heptane-2-Carbonitrile, 5-Chloro-6-((((Methylamino)Carbonyl)Oxy)Imino)-, (1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))-.	e	1	500/10,000
534-07-6	Bis(Chloromethyl) Ketone	e	1	10/10,000
4044-65-9	Bitoscanate	e	1	500/10,000
10294-34-5	Boron Trichloride	e	1	500
7637-07-2	Boron Trifluoride	e	1	500
353-42-4	Boron Trifluoride Compound With Methyl Ether (1:1)	e	1	1,000
28772-56-7	Bromadiolone	e	1	100/10,000
7726-95-6	Bromine	e. l	1	500
1306-19-0	Cadmium Oxide	e	1	100/10,000
2223-93-0	Cadmium Stearate	c, e	1	1,000/10,000
7778-44-1	Calcium Arsenate	d	1,000	500/10,000
8001-35-2	Camphechlor	d	1	500/10,000
56-25-7	Cantharidin	e	1	100/10,000
51-83-2	Carbachol Chloride	e	1	500/10,000
26419-73-8	Carbamic Acid, Methyl-, 0-(((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene)Amino)-.	e	1	100/10,000
1563-66-2	Carbofuran		10	10/10,000
75-15-0	Carbon Disulfide	l	100	10,000
786-19-6	Carbophenothion	e	1	500
57-74-9	Chlordane	d	1	1,000
470-90-6	Chlorfenvinfos	e	1	500
7782-50-5	Chlorine		10	100
24934-91-6	Chlormephos	e	1	500
999-81-5	Chlormequat Chloride	e, h	1	100/10,000
79-11-8	Chloroacetic Acid	e	1	100/10,000
107-07-3	Chloroethanol	e	1	500
627-11-2	Chloroethyl Chloroformate	e	1	1,000

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
		d, l	5,000	10,000
67-66-3	Chloroform	d, h	1	100
542-88-1	Chloromethyl Ether	c, d	1	100
107-30-2	Chloromethyl Methyl Ether	e	1	100/10,000
3691-35-8	Chlorophacinone	e	1	500/10,000
1982-47-4	Chloroxuron	e, h	1	500
21923-23-9	Chlorthiophos	e	1	1/10,000
10025-73-7	Chromic Chloride	e	1	100/10,000
62207-76-5	Cobalt, ((2,2'-(1,2-Ethanediylbis (Nitrilomethylidyne))Bis(6-Fluoro-phenolato))(2-)-N,N',O,O')-,	e, h	1	10/10,000
10210-68-1	Cobalt Carbonyl	e, h	1	10/10,000
64-86-8	Colchicine		10	100/10,000
56-72-4	Coumaphos	e	1	500/10,000
5836-29-3	Coumatetralyl	d	1,000	1,000/10,000
95-48-7	Cresol, o-	e	1	100/10,000
535-89-7	Crimidine		100	1,000
4170-30-3	Crotonaldehyde		100	1,000
123-73-9	Crotonaldehyde, (E)-		1,000	500/10,000
506-68-3	Cyanogen Bromide	e	1	1,000/10,000
506-78-5	Cyanogen Iodide	e	1	1,000
2636-26-2	Cyanophos	e	1	100
675-14-9	Cyanuric Fluoride	e	1	100/10,000
66-81-9	Cycloheximide	e, l	1	10,000
108-91-8	Cyclohexylamine	e	1	500/10,000
17702-41-9	Decaborane(14)	e	1	500
8065-48-3	Demeton	e	1	500
919-86-8	Demeton-S-Methyl	e	1	100/10,000
10311-84-9	Dialifor	e	1	100
19287-45-7	Diborane	d	1	10,000
111-44-4	Dichloroethyl Ether	e	1	1,000
149-74-6	Dichloromethylphenylsilane		10	1,000
62-73-7	Dichlorvos	e	1	100
141-66-2	Dicrotophos	d	1	500
1464-53-5	Diepoxybutane	e, h	1	500
814-49-3	Diethyl Chlorophospate	e	1	100/10,000
1642-54-2	Diethylcarbamazine Citrate	c, e	1	100/10,000
71-63-6	Digitoxin	e	1	1,000
2238-07-5	Diglycidyl Ether	e, h	1	10/10,000
20830-75-5	Digoxin	e	1	500
115-26-4	Dimefox		10	500/10,000
60-51-5	Dimethoate	e	1	500
2524-03-0	Dimethyl Phosphorochloridothioate	d	1	500
77-78-1	Dimethyl Sulfate	e	1	100
75-18-3	Dimethyl Sulfide	e, h	1	500
75-78-5	Dimethyldichlorosilane	d	1	1,000
57-14-7	Dimethylhydrazine	e	1	10/10,000
99-98-9	Dimethyl-p-Phenylenediamine	e	1	500/10,000
644-64-4	Dimetilan		10	10/10,000
534-52-1	Dinitrocresol		1,000	100/10,000
88-85-7	Dinoseb	e	1	500/10,000
1420-07-1	Dinoterb	e	1	500
78-34-2	Dioxathion	e	1	10/10,000
82-66-6	Diphacinone		100	100
152-16-9	Diphosphoramide, Octamethyl-		1	500
298-04-4	Disulfoton	e	1	500/10,000
514-73-8	Dithiazanine Iodide		100	100/10,000
541-53-7	Dithiobiuret	e, h	1	1/10,000
316-42-7	Emetine, Dihydrochloride		1	10/10,000
115-29-7	Endosulfan	e	1	500/10,000
2778-04-3	Endothion		1	500/10,000
72-20-8	Endrin	d, l	1,000	1,000
106-89-8	Epichlorohydrin	e	1	100/10,000
2104-64-5	EPN	c, e	1	1,000/10,000
50-14-6	Ergocalciferol	e	1	500/10,000
379-79-3	Ergotamine Tartrate	e	1	500
1622-32-8	Ethanesulfonyl Chloride, 2-Chloro-	e		

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
10140-87-1	Ethanol, 1,2-Dichloro-, Acetate	e	1	1,000
563-12-2	Ethion		10	1,000
13194-48-4	Ethoprophos	e	1	1,000
538-07-8	Ethylbis(2-Chloroethyl)Amine	e, h	1	500
371-62-0	Ethylene Fluorohydrin	c, e, h	1	10
75-21-8	Ethylene Oxide	d, l	1	1,000
107-15-3	Ethylenediamine		5,000	10,000
151-56-4	Ethyleneimine	d	1	500
542-90-5	Ethylthiocyanate	e	1	10,000
22224-92-6	Fenamiphos	e	1	10/10,000
122-14-5	Fenitrothion	e	1	500
115-90-2	Fensulfothion	e, h	1	500
4301-50-2	Fluenetil	e	1	100/10,000
7782-41-4	Fluorine	k	10	500
640-19-7	Fluoroacetamide	j	100	100/10,000
144-49-0	Fluoroacetic Acid	e	1	10/10,000
359-06-8	Fluoroacetyl Chloride	c, e	1	10
51-21-8	Fluorouracil	e	1	500/10,000
944-22-9	Fonofos	e	1	500
50-00-0	Formaldehyde	d,l	1,000	500
107-16-4	Formaldehyde Cyanohydrin	e, h	1	1,000
23422-53-9	Formetanate Hydrochloride	e,h	1	500/10,000
2540-82-1	Formothion	e	1	100
17702-57-7	Formparanate	e	1	100/10,000
21548-32-3	Fosthietan	e	1	500
3878-19-1	Fuberidazole	e	1	100/10,000
110-00-9	Furan		100	500
13450-90-3	Gallium Trichloride	e	1	500/10,000
77-47-4	Hexachlorocyclopentadiene	d, h	1	100
4835-11-4	Hexamethylenediamine, N,N'-Dibutyl-	e	1	500
302-01-2	Hydrazine	d	1	1,000
74-90-8	Hydrocyanic Acid		10	100
7647-01-0	Hydrogen Chloride (Gas Only)	e, l	1	500
7664-39-3	Hydrogen Fluoride		100	100
7722-84-1	Hydrogen Peroxide (Conc >52%)	e, l	1	1,000
7783-07-5	Hydrogen Selenide	e	1	10
7783-06-4	Hydrogen Sulfide	l	100	500
123-31-9	Hydroquinone	l	1	500/10,000
13463-40-6	Iron, Pentacarbonyl-	e	1	100
297-78-9	Isobenzan	e	1	100/10,000
78-82-0	Isobutyronitrile	e, h	1	1,000
102-36-3	Isocyanic Acid, 3,4-Dichlorophenyl Ester	e	1	500/10,000
465-73-6	Isodrin		1	100/10,000
55-91-4	Isofluorphate	c	100	100
4098-71-9	Isophorone Diisocyanate	b, e	1	100
108-23-6	Isopropyl Chloroformate	e	1	1,000
625-55-8	Isopropyl Formate	e	1	500
119-38-0	Isopropylmethylpyrazolyl Dimethylcarbamate	e	1	500
78-97-7	Lactonitrile	e	1	1,000
21609-90-5	Leptophos	e	1	500/10,000
541-25-3	Lewisite	c, e, h	1	10
58-89-9	Lindane	d	1	1,000/10,000
7580-67-8	Lithium Hydride	b, e	1	100
109-77-3	Malononitrile		1,000	500/10,000
12108-13-3	Manganese, Tricarbonyl Methylcyclopentadienyl	e, h	1	100
51-75-2	Mechlorethamine	c, e	1	10
950-10-7	Mephosfolan	e	1	500
1600-27-7	Mercuric Acetate	e	1	500/10,000
7487-94-7	Mercuric Chloride	e	1	500/10,000
21908-53-2	Mercuric Oxide	e	1	500/10,000
10476-95-6	Methacrolein Diacetate	e	1	1,000
760-93-0	Methacrylic Anhydride	e	1	500
126-98-7	Methacrylonitrile	h	1	500
920-46-7	Methacryloyl Chloride	e	1	100
30674-80-7	Methacryloyloxyethyl Isocyanate	e, h	1	100

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
10265-92-6	Methamidophos	e	1	100/10,000
558-25-8	Methanesulfonyl Fluoride	e	1	1,000
950-37-8	Methidathion	e	1	500/10,000
2032-65-7	Methiocarb		10	500/10,000
16752-77-5	Methomyl	h	100	500/10,000
151-38-2	Methoxyethylmercuric Acetate	e	1	500/10,000
80-63-7	Methyl 2-Chloroacrylate	e	1	500
74-83-9	Methyl Bromide	l	1,000	1,000
79-22-1	Methyl Chloroformate	d, h	1,000	500
624-92-0	Methyl Disulfide	e	1	100
60-34-4	Methyl Hydrazine		10	500
624-83-9	Methyl Isocyanate	f	1	500
556-61-6	Methyl Isothiocyanate	b, e	1	500
74-93-1	Methyl Mercaptan		100	500
3735-23-7	Methyl Phenkapton	e	1	500
676-97-1	Methyl Phosphonic Dichloride	b, e	1	100
556-64-9	Methyl Thiocyanate	e	1	10,000
78-94-4	Methyl Vinyl Ketone	e	1	10
502-39-6	Methylmercuric Dicyanamide	e	1	500/10,000
75-79-6	Methyltrichlorosilane	e, h	1	500
1129-41-5	Metolcarb	e	1	100/10,000
7786-34-7	Mevinphos		10	500
315-18-4	Mexacarbate		1,000	500/10,000
50-07-7	Mitomycin C	d	1	500/10,000
6923-22-4	Monocrotophos	e	1	10/10,000
2763-96-4	Muscimol	a, h	1,000	10,000
505-60-2	Mustard Gas	e, h	1	500
13463-39-3	Nickel Carbonyl	d	1	1
54-11-5	Nicotine	c	100	100
65-30-5	Nicotine Sulfate	e	1	100/10,000
7697-37-2	Nitric Acid		1,000	1,000
10102-43-9	Nitric Oxide	c	10	100
98-95-3	Nitrobenzene	l	1,000	10,000
1122-60-7	Nitrocyclohexane	e	1	500
10102-44-0	Nitrogen Dioxide		10	100
62-75-9	Nitrosodimethylamine	d, h	1	1,000
991-42-4	Norbormide	e	1	100/10,000
0	Organorhodium Complex (PMN-82-147)	e	1	10/10,000
630-60-4	Ouabain	c, e	1	100/10,000
23135-22-0	Oxamyl	e	1	100/10,000
78-71-7	Oxetane, 3,3-Bis(Chloromethyl)-	l	e	500
2497-07-6	Oxydisulfoton	e, h	1	500
10028-15-6	Ozone	e	1	100
1910-42-5	Paraquat	e	1	10/10,000
2074-50-2	Paraquat Methosulfate	e	1	10/10,000
56-38-2	Parathion	c, d	1	100
298-00-0	Parathion-Methyl	c	100	100/10,000
12002-03-8	Paris Green	d	100	500/10,000
19624-22-7	Pentaborane	e	1	500
2570-26-5	Pentadecylamine	e	1	100/10,000
79-21-0	Peracetic Acid	e	1	500
594-42-3	Perchloromethylmercaptan		100	500
108-95-2	Phenol		1,000	500/10,000
97-18-7	Phenol, 2,2'-Thiobis(4,6-Dichloro-	e	1	100/10,000
4418-66-0	Phenol, 2,2'-Thiobis(4-Chloro-6-Methyl)-	e	1	100/10,000
64-00-6	Phenol, 3-(1-Methylethyl)-, Methylcarbamate	e	1	500/10,000
58-36-6	Phenoxarsine, 10,10'-Oxydi-	e	1	500/10,000
696-28-6	Phenyl Dichloroarsine	d, h	1	500
59-88-1	Phenylhydrazine Hydrochloride	e	1	1,000/10,000
62-38-4	Phenylmercury Acetate		100	500/10,000
2097-19-0	Phenylsilatrane	e, h	1	100/10,000
103-85-5	Phenylthiourma		108	100/10,000
298-02-2	Phorate		10	10
4104-14-7	Phosacetim	e	1	100/10,000
947-02-4	Phosfolan	e	1	100/10,000

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
75-44-5	Phosgene	l	10	10
732-11-6	Phosmet	e	1	10/10,000
13171-21-6	Phosphamidon	e	1	100
7803-51-2	Phosphine		100	500
2703-13-1	Phosphonothioic Acid, Methyl-, O-Ethyl O-(4-(Methylthio)Phenyl) Ester.	e	1	500
50782-69-9	Phosphonothioic Acid, Methyl-, S-(2-(Bis(1-Methylethyl)Amino)Ethyl O-Ethyl Ester.	e	1	100
2665-30-7	Phosphonothioic Acid, Methyl-, O-(4-Nitrophenyl) O-Phenyl Ester	e	1	500
3254-63-5	Phosphoric Acid, Dimethyl 4-(Methylthio) Phenyl Ester	e	1	500
2587-90-8	Phosphorothioic Acid, O,O-Dimethyl-S-(2-Methylthio) Ethyl Ester	c, e, g	1	500
7723-14-0	Phosphorus	b, h	1	100
10025-87-3	Phosphorus Oxychloride	d	1,000	500
10026-13-8	Phosphorus Pentachloride	b, e	1	500
1314-56-3	Phosphorus Pentoxide	b, e	1	10
7719-12-2	Phosphorus Trichloride		1,000	1,000
57-47-6	Physostigmine	e	1	100/10,000
57-64-7	Physostigmine, Salicylate (1:1)	e	1	100/10,000
124-87-8	Picrotoxin	e	1	500/10,000
110-89-4	Piperidine	e	1	1,000
5281-13-0	Piprotal	e	1	100/10,000
23505-41-1	Pirimifos-Ethyl	e	1	1,000
10124-50-2	Potassium Arsenite	d	1,000	500/10,000
151-50-8	Potassium Cyanide	b	10	100
506-61-6	Potassium Silver Cyanide	b	1	500
2631-37-0	Promecarb	e, h	1	500/10,000
106-96-7	Propargyl Bromide	e	1	10
57-57-8	Propiolactone, Beta-	e	1	500
107-12-0	Propionitrile		10	500
542-76-7	Propionitrile, 3-Chloro-		1,000	1,000
70-69-9	Propiophenone, 4-Amino-	e, g	1	100/10,000
109-61-5	Propyl Chloroformate	e	1	500
75-56-9	Propylene Oxide	l	100	10,000
75-55-8	Propyleneimine	d	1	10,000
2275-18-5	Prothoate	e	1	100/10,000
129-00-0	Pyrene	c	5,000	1,000/10,000
140-76-1	Pyridine, 2-Methyl-5-Vinyl-	e	1	500
504-24-5	Pyridine, 4-Amino-	h	1,000	500/10,000
1124-33-0	Pyridine, 4-Nitro-, 1-Oxide	e	1	500/10,000
53558-25-1	Pyriminil	e, h	1	100/10,000
14167-18-1	Salcomine	e	1	500/10,000
107-44-8	Sarin	e, h	1	10
7783-00-8	Selenious Acid		10	1,000/10,000
7791-23-3	Selenium Oxychloride	e	1	500
563-41-7	Semicarbazide Hydrochloride	e	1	1,000/10,000
3037-72-7	Silane, (4-Aminobutyl)Diethoxymethyl-	e	1	1,000
7631-89-2	Sodium Arsenate	d	1,000	1,000/10,000
7784-46-5	Sodium Arsenite	d	1,000	500/10,000
26628-22-8	Sodium Azide (Na(N3))	b	1,000	500
124-65-2	Sodium Cacodylate	e	1	100/10,000
143-33-9	Sodium Cyanide (Na(CN))	b	10	100
62-74-8	Sodium Fluoroacetate		10	10/10,000
131-52-2	Sodium Pentachlorophenate	e	1	100/10,000
13410-01-0	Sodium Selenate	e	1	100/10,000
10102-18-8	Sodium Selenite	h	100	100/10,000
10102-20-2	Sodium Tellurite	e	1	500/10,000
900-95-8	Stannane, Acetoxytriphenyl-	e, g	1	500/10,000
57-24-9	Strychnine	c	10	100/10,000
60-41-3	Strychnine, Sulfate	e	1	100/10,000
3689-24-5	Sulfotep		100	500
3569-57-1	Sulfoxide, 3-Chloropropyl Octyl	e	1	500
7446-09-5	Sulfur Dioxide	e, l	1	500
7783-60-0	Sulfur Tetrafluoride	e	1	100
7446-11-9	Sulfur Trioxide	b, e	1	100
7664-93-9	Sulfuric Acid		1,000	1,000

APPENDIX A—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[Alphabetical Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
77-81-6	Tabun	c, e, h	1	10
13494-80-9	Tellurium	e	1	500/10,000
7783-80-4	Tellurium Hexafluoride	e, k	1	100
107-49-3	TEPP		10	100
13071-79-9	Terbufos	e, h	1	100
78-00-2	Tetraethyllead	c, d	10	100
597-64-8	Tetraethyltin	c, e	1	100
75-74-1	Tetramethyllead	c, e, l	1	100
509-14-8	Tetranitromethane		10	500
10031-59-1	Thallium Sulfate	h	100	100/10,000
6533-73-9	Thallous Carbonate	c, h	100	100/10,000
7791-12-0	Thallous Chloride	c, h	100	100/10,000
2757-18-8	Thallous Malonate	c, e, h	1	100/10,000
7446-18-6	Thallous Sulfate		100	100/10,000
2231-57-4	Thiocarbazide	e	1	1,000/10,000
39196-18-4	Thiofanox		100	100/10,000
297-97-2	Thionazin		100	500
108-98-5	Thiophenol		100	500
79-19-6	Thiosemicarbazide		100	100/10,000
5344-82-1	Thiourea, (2-Chlorophenyl)-		100	100/10,000
614-78-8	Thiourea, (2-Methylphenyl)-	e	1	500/10,000
7550-45-0	Titanium Tetrachloride	e	1	100
584-84-9	Toluene 2,4-Diisocyanate		100	500
91-08-7	Toluene 2,6-Diisocyanate		100	100
110-57-6	Trans-1,4-Dichlorobutene	e	1	500
1031-47-6	Triamiphos	e	1	500/10,000
24017-47-8	Triazofos	e	1	500
76-02-8	Trichloroacety Chloride	e	1	500
115-21-9	Trichloroethylsilane	e, h	1	500
327-98-0	Trichloronate	e, k	1	500
98-13-5	Trichlorophenylsilane	e, h	1	500
1558-25-4	Trichloro(Chloromethyl)Silane	e	1	100
27137-85-5	Trichloro(Dichlorophenyl)Silane	e	1	500
998-30-1	Triethoxysilane	e	1	500
75-77-4	Trimethylchlorosilane	e	1	1,000
824-11-3	Trimethylolpropane Phosphite	e, h	1	100/10,000
1066-45-1	Trimethyltin Chloride	e	1	500/10,000
639-58-7	Triphenyltin Chloride	e	1	500/10,000
555-77-1	Tris(2-Chloroethyl)Amine	e, h	1	100
2001-95-8	Valinomycin	c, e	1	1,000/10,000
1314-62-1	Vanadium Pentoxide		1,000	100/10,000
108-05-4	Vinyl Acetate Monomer	d, l	5,000	1,000
81-81-2	Warfarin		100	500/10,000
129-06-6	Warfarin Sodium	e, h	1	100/10,000
28347-13-9	Xylylene Dichloride	e	1	100/10,000
58270-08-9	Zinc, Dichloro(4,4-Dimethyl-5((((Methylamino) Carbonyl)Oxy)Imino)Pentanenitrile)-,(T-4)-.	e	1	100/10,000
1314-84-7	Zinc Phosphide	b	100	500

*Only the statutory or final RQ is shown. For more information, see 40 CFR Table 302.4

Notes:

a This chemical does not meet acute toxicity criteria. Its TPQ is set at 10,000 pounds.

b This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-powder, non-molten, non-solution form.

c The calculated TPQ changed after technical review as described in the technical support document.

d Indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or other toxicity is completed.

e Statutory reportable quantity for purposes of notification under SARA sect 304(a)(2).

f The statutory 1 pound reportable quantity for methyl isocyanate may be adjusted in a future rulemaking action.

g New chemicals added that were not part of the original list of 402 substances.

h Revised TPQ based on new or re-evaluated toxicity data.

j TPQ is revised to its calculated value and does not change due to technical review as in proposed rule.

k The TPQ was revised after proposal due to calculation error.

l Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

[52 FR 13395, Apr. 22, 1987; 52 FR 15321, 15412, Apr. 28, 1987; 52 FR 48073-48074, Dec. 17, 1987; 53 FR 5575, Feb. 25, 1988]

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
0	Organorhodium Complex (PMN-82-147)	e	1	10/10,000
50-00-0	Formaldehyde	d, l	1,000	500
50-07-7	Mitomycin C	d	1	500/10,000
50-14-6	Ergocalciferol	c, e	1	1,000/10,000
51-21-8	Fluorouracil	e	1	500/10,000
51-75-2	Mechlorethamine	c, e	1	10
51-83-2	Carbachol Chloride	e	1	500/10,000
54-11-5	Nicotine	c	100	100
54-62-6	Aminopterin	e	1	500/10,000
55-91-4	Isofluorphate	c	100	100
56-25-7	Cantharidin	e	1	100/10,000
56-38-2	Parathion	c, d	1	100
56-72-4	Coumaphos		10	100/10,000
57-14-7	Dimethylhydrazine	d	1	1,000
57-24-9	Strychnine	c	10	100/10,000
57-47-6	Physostigmine	e	1	100/10,000
57-57-8	Propiolactone, Beta-	e	1	500
57-64-7	Physostigmine, Salicylate (1:1)	e	1	100/10,000
57-74-9	Chlordane	d	1	1,000
58-36-6	Phenoxarsine, 10,10'-Oxydi-	e	1	500/10,000
58-89-9	Lindane	d	1	1,000/10,000
59-88-1	Phenylhydrazine Hydrochloride	e	1	1,000/10,000
60-34-4	Methyl Hydrazine		10	500
60-41-3	Strychnine, Sulfate	e	1	100/10,000
60-51-5	Dimethoate		10	500/10,000
62-38-4	Phenylmercury Acetate		100	500/10,000
62-53-3	Aniline	d, l	5,000	1,000
62-73-7	Dichlorvos		10	1,000
62-74-8	Sodium Fluoroacetate		10	10/10,000
62-75-9	Nitrosodimethylamine	d, h	1	1,000
64-00-6	Phenol, 3-(1-Methylethyl)-, Methylcarbamate	e	1	500/10,000
64-86-8	Colchicine	e, h	1	10/10,000
65-30-5	Nicotine Sulfate	e	1	100/10,000
66-81-9	Cycloheximide	e	1	100/10,000
67-66-3	Chloroform	d, l	5,000	10,000
70-69-9	Propiophenone, 4-Amino-	e, g	1	100/10,000
71-63-6	Digitoxin	c, e	1	100/10,000
72-20-8	Endrin		1	500/10,000
74-83-9	Methyl bromide	l	1,000	1,000
74-90-8	Hydrocyanic Acid		10	100
74-93-1	Methyl Mercaptan		100	500
75-15-0	Carbon Disulfide	l	100	10,000
75-18-3	Dimethyl Sulfide	e	1	100
75-21-8	Ethylene Oxide	d, l	1	1,000
75-44-5	Phosgene	l	10	10
75-55-8	Propyleneimine	d	1	10,000
75-56-9	Propylene Oxide	l	100	10,000
75-74-1	Tetramethyllead	c, e, l	1	100
75-77-4	Trimethylchlorosilane	e	1	1,000
75-78-5	Dimethyldichlorosilane	e, h	1	500
75-79-6	Methyltrichlorosilane	e, h	1	500
75-86-5	Acetone Cyanohydrin		10	1,000
76-02-8	Trichloroacetyl Chloride	e	1	500
77-47-4	Hexachlorocyclopentadiene	d, h	1	100
77-78-1	Dimethyl Sulfate	d	1	500
77-81-6	Tabun	c, e, h	1	10
78-00-2	Tetraethyllead	c, d	10	100
78-34-2	Dioxathion	e	1	500
78-53-5	Amiton	e	1	500
78-71-7	Oxetane, 3,3-Bis(Chloromethyl)-	e	1	500
78-82-0	Isobutyronitrile	e, h	1	1,000
78-94-4	Methyl Vinyl Ketone	e	1	10
78-97-7	Lactonitrile	e	1	1,000
79-06-1	Acrylamide	d, l	5,000	1,000/10,000

Appendix B—The List of Extremely Hazardous Substances and Their Threshold Planning Quantities—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
79-11-8	Chloroacetic Acid	e	1	100/10,000
79-19-6	Thiosemicarbazide		100	100/10,000
79-21-0	Peracetic Acid	e	1	500
79-22-1	Methyl Chloroformate	d, h	1,000	500
80-63-7	Methyl 2-Chloroacrylate	e	1	500
81-81-2	Warfarin		100	500/10,000
82-66-6	Diphacinone	e	1	10/10,000
86-50-0	Azinphos-Methyl		1	10/10,000
86-88-4	ANTU		100	500/10,000
88-05-1	Aniline, 2,4,6-Trimethyl-	e	1	500
88-85-7	Dinoseb		1,000	100/10,000
91-08-7	Toluene 2,6-Diisocyanate		100	100
95-48-7	Cresol, o-	d	1,000	1,000/10,000
97-18-7	Phenol, 2,2'-Thiobis(4,6-dichloro)-	e	1	100/10,000
98-05-5	Benzenearsonic Acid	e	1	10/10,000
98-07-7	Benzotrichloride	d	1	100
98-13-5	Trichlorophenylsilane	e, h	1	500
98-16-8	Benzenamine, 3-(Trifluoromethyl)-	e	1	500
98-87-3	Benzal Chloride	d	5,000	500
98-95-3	Nitrobenzene	l	1,000	10,000
99-98-9	Dimethyl-p-Phenylenediamine	e	1	10/10,000
100-14-1	Benzene, 1-(Chloromethyl)-4-Nitro-	e	1	500/10,000
100-44-7	Benzyl Chloride	d	100	500
102-36-3	Isocyanic Acid, 3,4-Dichlorophenyl Ester	e	1	500/10,000
103-85-5	Phenylthiourea		100	100/10,000
106-89-8	Epichlorohydrin	d, l	1,000	1,000
106-96-7	Propargyl Bromide	e	1	10
107-02-8	Acrolein		1	500
107-07-3	Chloroethanol	e	1	500
107-11-9	Allylamine	e	1	500
107-12-0	Propionitrile		10	500
107-13-1	Acrylonitrile	d, l	100	10,000
107-15-3	Ethylenediamine		5,000	10,000
107-16-4	Formaldehyde Cyanohydrin	e, h	1	1,000
107-18-6	Allyl Alcohol		100	1,000
107-30-2	Chloromethyl Methyl Ether	c, d	1	100
107-44-8	Sarin	e, h	1	10
107-49-3	TEPP		10	100
108-05-4	Vinyl Acetate Monomer	d, l	5,000	1,000
108-23-6	Isopropyl Chloroformate	e	1	1,000
108-91-8	Cyclohexylamine	e, l	1	10,000
108-95-2	Phenol		1,000	500/10,000
108-98-5	Thiophenol		100	500
109-61-5	Propyl Chloroformate	e	1	500
109-77-3	Malononitrile		1,000	500/10,000
110-00-9	Furan		100	500
110-57-6	Trans-1,4-Dichlorobutene	e	1	500
110-89-4	Piperidine	e	1	1,000
111-44-4	Dichloroethyl Ether	d	1	10,000
111-69-3	Adiponitrile	e, l	1	1,000
115-21-9	Trichloroethylsilane	e, h	1	500
115-26-4	Dimefox	e	1	500
115-29-7	Endosulfan		1	10/10,000
115-90-2	Fensulfothion	e, h	1	500
116-06-3	Aldicarb	c	1	100/10,000
119-38-0	Isopropylmethylpyrazolyl Dimethylcarbamate	e	1	500
122-14-5	Fenitrothion	e	1	500
123-31-9	Hydroquinone	l	1	500/10,000
123-73-9	Crotonaldehyde, (E)-		100	1,000
124-65-2	Sodium Cacodylate	e	1	100/10,000
124-87-8	Picrotoxin	e	1	500/10,000
126-98-7	Methacrylonitrile	h	1	500
129-00-0	Pyrene	c	5,000	1,000/10,000
129-06-6	Warfarin Sodium	e, h	1	100/10,000
131-52-2	Sodium Pentachlorophenate	e	1	100/10,000
140-29-4	Benzyl Cyanide	e, h	1	500

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
140-76-1	Pyridine, 2-Methyl-5-Vinyl-	e	1	500
141-66-2	Dicrotophos	e	1	100
143-33-9	Sodium Cyanide (Na(CN))	b	10	100
144-49-0	Fluoroacetic Acid	e	1	10/10,000
149-74-6	Dichloromethylphenylsilane	e	1	1,000
151-38-2	Methoxyethylmercuric Acetate	e	1	500/10,000
151-50-8	Potassium Cyanide	b	10	100
151-56-4	Ethyleneimine	d	1	500
152-16-9	Diphosphoramide, Octamethyl-		100	100
297-78-9	Isobenzan	e	1	100/10,000
297-97-2	Thionazin		100	500
298-00-0	Parathion-Methyl	c	100	100/10,000
298-02-2	Phorate		10	10
298-04-4	Disulfoton		1	500
300-62-9	Amphetamine	e	1	1,000
302-01-2	Hydrazine	d	1	1,000
309-00-2	Aldrin	d	1	500/10,000
315-18-4	Mexacarbate		1,000	500/10,000
316-42-7	Emetine, Dihydrochloride	e, h	1	1/10,000
327-98-0	Trichloronate	e, k	1	500
353-42-4	Boron Trifluoride Compound With Methyl Ether (1:1)	e	1	1,000
359-06-8	Fluoroacetyl Chloride	c, e	1	10
371-62-0	Ethylene Fluorohydrin	c, e, h	1	10
379-79-3	Ergotamine Tartrate	e	1	500/10,000
465-73-6	Isodrin		1	100/10,000
470-90-6	Chlorfenvinfos	e	1	500
502-39-6	Methylmercuric Dicyanamide	e	1	500/10,000
504-24-5	Pyridine, 4-Amino-	h	1,000	500/10,000
505-60-2	Mustard Gas	e, h	1	500
506-61-6	Potassium Silver Cyanide	b	1	500
506-68-3	Cyanogen Bromide		1,000	500/10,000
506-78-5	Cyanogen Iodide	e	1	1,000/10,000
509-14-8	Tetranitromethane		10	500
514-73-8	Dithiazanine Iodide	e	1	500/10,000
534-07-6	Bis(Chloromethyl) Ketone	e	1	10/10,000
534-52-1	Dinitrocresol		10	10/10,000
535-89-7	Crimidine	e	1	100/10,000
538-07-8	Ethylbis(2-Chloroethyl)Amine	e, h	1	500
541-25-3	Lewisite	c, e, h	1	10
541-53-7	Dithiobiuret		100	100/10,000
542-76-7	Propionitrile, 3-Chloro-		1,000	1,000
542-88-1	Chloromethyl Ether	d, h	1	100
542-90-5	Ethylthiocyanate	e	1	10,000
555-77-1	Tris(2-Chloroethyl)Amine	e, h	1	100
556-61-6	Methyl Isothiocyanate	b, e	1	500
556-64-9	Methyl Thiocyanate	e	1	10,000
558-25-8	Methanesulfonyl Fluoride	e	1	1,000
563-12-2	Ethion		10	1,000
563-41-7	Semicarbazide Hydrochloride	e	1	1,000/10,000
584-84-9	Toluene 2,4-Diisocyanate		100	500
594-42-3	Perchloromethylmercaptan		100	500
597-64-8	Tetraethyltin	c, e	1	100
614-78-8	Thiourea, (2-Methylphenyl)-	e	1	500/10,000
624-83-9	Methyl Isocyanate	f	1	500
624-92-0	Methyl Disulfide	e	1	100
625-55-8	Isopropyl Formate	e	1	500
627-11-2	Chloroethyl Chloroformate	e	1	1,000
630-60-4	Ouabain	c, e	1	100/10,000
639-58-7	Triphenyltin Chloride	e	1	500/10,000
640-19-7	Fluoroacetamide	j	100	100/10,000
644-64-4	Dimetilan	e	1	500/10,000
675-14-9	Cyanuric Fluoride	e	1	100
676-97-1	Methyl Phosphonic Dichloride	b, e	1	100
696-28-6	Phenyl Dichloroarsine	d, h	1	500
732-11-6	Phosmet	e	1	10/10,000
760-93-0	Methacrylic Anhydride	e	1	500

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
786-19-6	Carbophenothion	e	1	500
814-49-3	Diethyl Chlorophosphate	e, h	1	500
814-68-6	Acrylyl Chloride	e, h	1	100
824-11-3	Trimethylolpropane Phosphite	e, h	1	100/10,000
900-95-8	Stannane, Acetoxytriphenyl-	e, g	1	500/10,000
919-86-8	Demeton-S-Methyl	e	1	500
920-46-7	Methacryloyl Chloride	e	1	100
944-22-9	Fonofos	e	1	500
947-02-4	Phosfolan	e	1	100/10,000
950-10-7	Mephosfolan	e	1	500
950-37-8	Methidathion	e	1	500/10,000
991-42-4	Norbormide	e	1	100/10,000
998-30-1	Triethoxysilane	e	1	500
999-81-5	Chlormequat Chloride	e, h	1	100/10,000
1031-47-6	Triamiphos	e	1	500/10,000
1066-45-1	Trimethyltin Chloride	e	1	500/10,000
1122-60-7	Nitrocyclohexane	e	1	500
1124-33-0	Pyridine, 4-Nitro-, 1-Oxide	e	1	500/10,000
1129-41-5	Metolcarb	e	1	100/10,000
1303-28-2	Arsenic Pentoxide	d	5,000	100/10,000
1306-19-0	Cadmium Oxide	e	1	100/10,000
1314-56-3	Phosphorus Pentoxide	b, e	1	10
1314-62-1	Vanadium Pentoxide		1,000	100/10,000
1314-84-7	Zinc Phosphide	b	100	500
1327-53-3	Arsenous Oxide	d, h	5,000	100/10,000
1397-94-0	Antimycin A	c, e	1	1,000/10,000
1420-07-1	Dinoterb	e	1	500/10,000
1464-53-5	Diepoxybutane	d	1	500
1558-25-4	Trichloro(Chloromethyl)Silane	e	1	100
1563-66-2	Carbofuran		10	10/10,000
1600-27-7	Mercuric Acetate	e	1	500/10,000
1622-32-8	Ethanesulfonyl Chloride, 2 Chloro-	e	1	500
1642-54-2	Diethylcarbamazine Citrate	e	1	100/10,000
1752-30-3	Acetone Thiosemicarbazide	e	1	1,000/10,000
1910-42-5	Paraquat	e	1	10/10,000
1982-47-4	Chloroxuron	e	1	500/10,000
2001-95-8	Valinomycin	c, e	1	1,000/10,000
2032-65-7	Methiocarb		10	500/10,000
2074-50-2	Paraquat Methosulfate	e	1	10/10,000
2097-19-0	Phenylsilatrane	e, h	1	100/10,000
2104-64-5	EPN	e	1	100/10,000
2223-93-0	Cadmium Stearate	c, e	1	1,000/10,000
2231-57-4	Thiocarbazide	e	1	1,000/10,000
2238-07-5	Diglycidyl Ether	e	1	1,000
2275-18-5	Prothoate	e	1	100/10,000
2497-07-6	Oxydisulfoton	e, h	1	500
2524-03-0	Dimethyl Phosphorochloridothioate	e	1	500
2540-82-1	Formothion	e	1	100
2570-26-5	Pentadecylamine	e	1	100/10,000
2587-90-8	Phosphorothioic Acid, O,O-Dimethyl-S-(2-Methylthio) Ethyl Ester	c, e, g	1	500
2631-37-0	Promecarb	e, h	1	500/10,000
2636-26-2	Cyanophos	e	1	1,000
2642-71-9	Azinphos-Ethyl	e	1	100/10,000
2665-30-7	Phosphonothioic Acid, Methyl-,O-(4-Nitrophenyl) O-Phenyl Ester	e	1	500
2703-13-1	Phosphonothioic Acid, Methyl-,O-Ethyl O-(4-(Methylthio)Phenyl) Ester.	e	1	500
2757-18-8	Thallous Malonate	c, e, h	1	100/10,000
2763-96-4	Muscimol	a, h	1,000	10,000
2778-04-3	Endothion	e	1	500/10,000
3037-72-7	Silane, (4-Aminobutyl)Diethoxymethyl-	e	1	1,000
3254-63-5	Phosphoric Acid, Dimethyl 4-(Methylthio) Phenyl Ester	e	1	500
3569-57-1	Sulfoxide, 3-Chloropropyl Octyl	e	1	500
3615-21-2	Benzimidazole, 4,5-Dichloro-2-(Trifluoromethyl)-	e, g	1	500/10,000
3689-24-5	Sulfotep		100	500
3691-35-8	Chlorophacinone	e	1	100/10,000
3734-97-2	Amiton Oxalate	e	1	100/10,000

APPENDIX B—THE LIST OF EXTREMELY HAZARDOUS SUBSTANCES AND THEIR THRESHOLD PLANNING QUANTITIES—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
3735-23-7	Methyl Phenkapton	e	1	500
3878-19-1	Fuberidazole	e	1	100/10,000
4044-65-9	Bitoscanate	e	1	500/10,000
4098-71-9	Isophorone Diisocyanate	b, e	1	100
4104-14-7	Phosacetim	e	1	100/10,000
4170-30-3	Crotonaldehyde		100	1,000
4301-50-2	Fluenetil	e	1	100/10,000
4418-66-0	Phenol, 2,2′-Thiobis(4-Chloro-6-Methyl)-	e	1	100/10,000
4835-11-4	Hexamethylenediamine, N,N′-Dibutyl-	e	1	500
5281-13-0	Piprotal	e	1	100/10,000
5344-82-1	Thiourea, (2-Chlorophenyl)-		100	100/10,000
5836-29-3	Coumatetralyl	e	1	500/10,000
6533-73-9	Thallous Carbonate	c, h	100	100/10,000
6923-22-4	Monocrotophos	e	1	10/10,000
7446-09-5	Sulfur Dioxide	e, l	1	500
7446-11-9	Sulfur Trioxide	b, e	1	100
7446-18-6	Thallous Sulfate		100	100/10,000
7487-94-7	Mercuric Chloride	e	1	500/10,000
7550-45-0	Titanium Tetrachloride	e	1	100
7580-67-8	Lithium Hydride	b, e	1	100
7631-89-2	Sodium Arsenate	d	1,000	1,000/10,000
7637-07-2	Boron Trifluoride	e	1	500
7647-01-0	Hydrogen Chloride (Gas Only)	e, l	1	500
7664-39-3	Hydrogen Fluoride		100	100
7664-41-7	Ammonia	l	100	500
7664-93-9	Sulfuric Acid		1,000	1,000
7697-37-2	Nitric Acid		1,000	1,000
7719-12-2	Phosphorus Trichloride		1,000	1,000
7722-84-1	Hydrogen Peroxide (Conc >52%)	e, l	1	1,000
7723-14-0	Phosphorus	b, h	1	100
7726-95-6	Bromine	e, l	1	500
7778-44-1	Calcium Arsenate	d	1,000	500/10,000
7782-41-4	Fluorine	k	10	500
7782-50-5	Chlorine		10	100
7783-00-8	Selenious Acid		10	1,000/10,000
7783-06-4	Hydrogen Sulfide	l	100	500
7783-07-5	Hydrogen Selenide	e	1	10
7783-60-0	Sulfur Tetrafluoride	e	1	100
7783-70-2	Antimony Pentafluoride	e	1	500
7783-80-4	Tellurium Hexafluoride	e, k	1	100
7784-34-1	Arsenous Trichloride	d	5,000	500
7784-42-1	Arsine	e	1	100
7784-46-5	Sodium Arsenite	d	1,000	500/10,000
7786-34-7	Mevinphos		10	500
7791-12-0	Thallous Chloride	c, h	100	100/10,000
7791-23-3	Selenium Oxychloride	e	1	500
7803-51-2	Phosphine		100	500
8001-35-2	Camphechlor	d	1	500/10,000
8065-48-3	Demeton	e	1	500
10025-73-7	Chromic Chloride	e	1	1/10,000
10025-87-3	Phosphorus Oxychloride	d	1,000	500
10026-13-8	Phosphorus Pentachloride	b, e	1	500
10028-15-6	Ozone	e	1	100
10031-59-1	Thallium Sulfate	h	100	100/10,000
10102-18-8	Sodium Selenite	h	100	100/10,000
10102-20-2	Sodium Tellurite	e	1	500/10,000
10102-43-9	Nitric Oxide	c	10	100
10102-44-0	Nitrogen Dioxide		10	100
10124-50-2	Potassium Arsenite	d	1,000	500/10,000
10140-87-1	Ethanol, 1,2-Dichloro-, Acetate	e	1	1,000
10210-68-1	Cobalt Carbonyl	e, h	1	10/10,000
10265-92-6	Methamidophos	e	1	100/10,000
10294-34-5	Boron Trichloride	e	1	500
10311-84-9	Dialifor	e	1	100/10,000
10476-95-6	Methacrolein Diacetate	e	1	1,000
12002-03-8	Paris Green	d	100	500/10,000

Appendix B—The List of Extremely Hazardous Substances and Their Threshold Planning Quantities—Continued

[CAS Number Order]

CAS No.	Chemical name	Notes	Reportable quantity* (pounds)	Threshold planning quantity (pounds)
12108-13-3	Manganese, Tricarbonyl Methylcyclopentadienyl	e, h	1	100
13071-79-9	Terbufos	e, h	1	100
13171-21-6	Phosphamidon	e	1	100
13194-48-4	Ethoprophos	e	1	1,000
13410-01-0	Sodium Selenate	e	1	100/10,000
13450-90-3	Gallium Trichloride	e	1	500/10,000
13463-39-3	Nickel Carbonyl-	d	1	1
13463-40-6	Iron, Pentacarbonyl	e	1	100
13494-80-9	Tellurium	e	1	500/10,000
14167-18-1	Salcomine	e	1	500/10,000
15271-41-7	Bicyclo[2.2.1]Heptane-2-Carbonitrile, 5-Chloro-6-(((Methylamino)Carbonyl)Oxy)Imino)-, (1s-(1-alpha, 2-beta, 4-alpha, 5-alpha, 6E))-.	e	1	500/10,000
16752-77-5	Methomyl	h	100	500/10,000
17702-41-9	Decaborane(14)	e	1	500/10,000
17702-57-7	Formparanate	e	1	100/10,000
19287-45-7	Diborane	e	1	100
19624-22-7	Pentaborane	e	1	500
20830-75-5	Digoxin	e, h	1	10/10,000
20859-73-8	Aluminum Phosphide	b	100	500
21548-32-3	Fosthietan	e	1	500
21609-90-5	Leptophos	e	1	500/10,000
21908-53-2	Mercuric Oxide	e	1	500/10,000
21923-23-9	Chlorthiophos	e, h	1	500
22224-92-6	Fenamiphos	e	1	10/10,000
23135-22-0	Oxamyl	e	1	100/10,000
23422-53-9	Formetanate Hydrochloride	e,h	1	500/10,000
23505-41-1	Pirimifos-Ethyl	e	1	1,000
24017-47-8	Triazofos	e	1	500
24934-91-6	Chlormephos	e	1	500
26419-73-8	Carbamic Acid, Methyl-, O-(((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene)Amino)-.	e	1	100/10,000
26628-22-8	Sodium Azide ($Na(N_3)$)	b	1,000	500
27137-85-5	Trichloro(Dichlorophenyl)Silane	e	1	500
28347-13-9	Xylylene Dichloride	e	1	100/10,000
28772-56-7	Bromadiolone	e	1	100/10,000
30674-80-7	Methacryloyloxyethyl Isocyanate	e, h	1	100
39196-18-4	Thiofanox		100	100/10,000
50782-69-9	Phosphonothioic Acid, Methyl-, S-(2-(Bis(1-Methylethyl)Amino)Ethyl) O-Ethyl Ester.	e	1	100
53558-25-1	Pyriminil	e, h	1	100/10,000
58270-08-9	Zinc, Dichloro(4,4-Dimethyl-5((((Methylamino)Carbonyl)Oxy)Imino)Pentanenitrile)-, (T-4)-.	e	1	100/10,000
62207-76-5	Cobalt, ((2,2'-(1,2-Ethanediylbis(Nitrilomethylidyne))Bis(6-Fluorophenolato))(2-)-N,N',O,O')-.	e	1	100/10,000

*Only the statutory or final RQ is shown. For more information, see 40 CFR Table 302.4.

Notes:

a This chemical does not meet acute toxicity criteria. Its TPQ is set at 10,000 pounds.

b This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-powder, non-molten, non-solution form.

c The calculated TPQ changed after technical review as described in the technical support document.

d Indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or other toxicity is completed.

e Statutory reportable quantity for purposes of notification under SARA sect 304(a)(2).

f The statutory 1 pound reportable quantity for methyl isocyanate may be adjusted in a future rulemaking action.

g New chemicals added that were not part of the original list of 402 substances.

h Revised TPQ based on new or re-evaluated toxicity data.

j TPQ is revised to its calculated value and does not change due to technical review as in proposed rule.

k The TPQ was revised after proposal due to calculation error.

l Chemicals on the original list that do not meet the toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

[52 FR 13395, Apr. 22, 1987; 52 FR 15412, Apr. 28, 1987; 52 FR 48073-48074, Dec. 17, 1987; 53 FR 5575, Feb. 25, 1988]

PART 370—HAZARDOUS CHEMICAL REPORTING: COMMUNITY RIGHT-TO-KNOW

Subpart A—General Provisions

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370.2 Definitions.
370.5 Penalties.

Subpart B—Reporting Requirements

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370.25 Inventory reporting.
370.28 Mixtures.

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Subpart D—Inventory Forms

370.40 Tier I emergency and hazardous chemical inventory form.
370.41 Tier II emergency and hazardous chemical inventory form.

AUTHORITY: Secs. 311, 312, 324, 325, 328, 329 of Pub. L. 99-499, 100 Stat. 1613, 42 U.S.C. 11011, 11012, 11024, 11025, 11028, 11029.

SOURCE: 52 FR 38364, Oct. 15, 1987, unless otherwise noted.

Subpart A—General Provisions

§ 370.1 Purpose.

These regulations establish reporting requirements which provide the public with important information on the hazardous chemicals in their communities for the purpose of enhancing community awareness of chemical hazards and facilitating development of State and local emergency response plans.

§ 370.2 Definitions.

"*Commission*" means the State emergency response commission, or the Governor if there is no commission, for the State in which the facility is located.

"*Committee*" means the local emergency planning committee for the emergency planning district in which the facility is located.

"*Environment*" includes water, air, and land and the interrelationship that exists among and between water, air, and land and all living things.

"*Extremely hazardous substance*" means a substance listed in the Appendices to 40 CFR Part 355, Emergency Planning and Notification.

"*Facility*" means all buildings, equipment, structures, and other stationary items that are located on a single site or on contiguous or adjacent sites and that are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person). For purposes of emergency release notification, the term includes motor vehicles, rolling stock, and aircraft.

"*Hazard category*" means any of the following:

(1) "Immediate (acute) health hazard," including "highly toxic," "toxic," "irritant," "sensitizer," "corrosive," (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations) and other hazardous chemicals that cause an adverse effect to a target organ and which effect usually occurs rapidly as a result of short term exposure and is of short duration;

(2) "Delayed (chronic) health hazard," including "carcinogens" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations) and other hazardous chemicals that cause an adverse effect to a target organ and which effect generally occurs as a result of long term exposure and is of long duration;

(3) "Fire hazard," including "flammable," combustible liquid," "pyrophoric," and "oxidizer" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations);

(4) "Sudden release of pressure," including "explosive" and "compressed gas" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations); and

(5) "Reactive," including "unstable reactive," "organic peroxide," and "water reactive" (as defined under § 1910.1200 of Title 29 of the Code of Federal Regulations).

"*Hazardous chemical*" means any hazardous chemical as defined under § 1910.1200(c) of Title 29 of the Code of Federal Regulations, except that uch term does not include the follow-ng substances:

(1) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration.

(2) Any substance present as a solid n any manufactured item to the extent exposure to the substance does not occur under normal conditions of use.

(3) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public.

(4) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual.

(5) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

"*Inventory form*" means the Tier I and Tier II emergency and hazardous chemical inventory forms set forth in Subpart D of this Part

"*Material Safety Data Sheet*" or "MSDS" means the sheet required to be developed under § 1910.1200(g) of Title 29 of the Code of Federal Regulations.

"*Person*" means any individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, association, State, municipality, commission, political subdivision of State, or interstate body.

"*Present in the same form and concentration as a product packaged for distribution and use by the general public*" means a substance packaged in a similar manner and present in the same concentration as the substance when packaged for use by the general public, whether or not it is intended for distribution to the general public or used for the same purpose as when it is packaged for use by the general public.

"*State*" means any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the United States has jurisdiction.

"*TPQ*" means the threshold planning quantity for an extremely hazardous substance as defined in 40 CFR Part 355.

§ 370.5 Penalties.

(a) *MSDA reporting.* Any person other than a governmental entity who violates any requirement of § 370.21 shall be liable for civil and administrative penalties of not more than $10,000 for each violation.

(b) *Inventory reporting.* Any person other than a governmental entity who violates any requirement of § 370.25 shall be liable for civil and administrative penalties of not more than $25,000 for each violation.

(c) *Continuing violations.* Each day a violation described in paragraph (a) or (b) of this section continues shall constitute a separate violation.

Subpart B—Reporting Requirements

§ 370.20 Applicability.

(a) *General.* The requirements of this subpart apply to any facility that is required to prepare or have available a material safety data sheet (or MSDS) for a hazardous chemical under the Occupational Safety and Health Act of 1970 and regulations promulgated under that Act.

(b) *Minimum threshold levels.* Except as provided in paragraph (b)(3) of this section, the minimum threshold level for reporting under this subpart shall be according to the following schedule.

(1) The owner or operator of a facility subject to this Subpart shall submit an MSDS:

(i) On or before October 17, 1987 (or 3 months after the facility first becomes subject to this subpart), for all hazardous chemicals present at the facility in amounts equal to or greater than 10,000 pounds, or that are extremely hazardous substances present at the facility in an amount greater than or equal to 500 pounds (or 55 gallons) or the TPQ, whichever is less, and

(ii) On or before October 17, 1989 (or 2 years and 3 months after the facility first becomes subject to this Subpart), for all hazardous chemicals present at the facility between 10,000 and zero pounds for which an MSDS has not yet been submitted.

(2) The owner or operator of a facility subject to this Subpart shall submit the Tier I form:

(i) On or before March 1, 1988 (or March 1 of the first year after the facility first becomes subject to this Subpart), covering all hazardous chemicals present at the facility during the preceding calendar year in amounts equal to or greater than 10,000 pounds, or that are extremely hazardous substances present at the facility in an amount greater than or equal to 500 pounds (or 55 gallons) or the TPQ, whichever is less, and

(ii) On or before March 1, 1989 (or March 1 of the second year after the facility first becomes subject to this Subpart), covering all hazardous chemicals present at the facility during the preceding calendar year in amounts equal to or greater than 10,000 pounds, or that are extremely hazardous substances present at the facility in an amount greater than or equal to 500 pounds (or 55 gallons) or the TPQ, whichever is less, and

(iii) On or before March 1990 (or March 1 of the third year after the facility first becomes subject to this Subpart), and annually thereafter, covering all hazardous chemicals present at the facility during the preceding calendar year in amounts equal to or greater than zero pounds or that are extremely hazardous substances present at the facility in an amount equal to or greater than 500 pounds (or 55 gallons) or the TPQ, whichever is less.

(3) The minimum threshold for reporting in response to requests for submission of an MSDS or a Tier II form pursuant to §§ 370.21(d) and 370.25(c) of this part shall be zero.

§ 370.21 MSDS reporting.

(a) *Basic requirement.* The owner or operator of a facility subject to this Subpart shall submit an MSDS for each hazardous chemical present at the facility according to the minimum threshold schedule provided in paragraph (b) of § 370.20 to the committee, the commission, and the fire department with jurisdiction over the facility.

(b) *Alternative reporting.* In lieu of the submission of an MSDS for each hazardous chemical under paragraph (a) of this section, the owner or operator may submit the following:

(1) A list of the hazardous chemicals for which the MSDS is required, grouped by hazard category as defined under § 370.2 of this Part;

(2) The chemical or common name of each hazardous chemical as provided on the MSDS; and

(3) Except for reporting of mixtures under § 370.28(a)(2), any hazardous component of each hazardous chemical as provided on the MSDS.

(c) *Supplemental reporting.* (1) The owner or operator of a facility that has submitted an MSDS under this section shall provide a revised MSDS to the committee, the commission, and the fire department with jurisdiction over the facility within three months after discovery of significant new information concerning the hazardous chemical for which the MSDS was submitted.

(2) After October 17, 1987, the owner or operator of a facility subject to this section shall submit an MSDS for a hazardous chemical pursuant to paragraph (a) of this section or a list pursuant to paragraph (b) of this section within three months after the owner or operator is first required to prepare or have available the MSDS or after a hazardous chemical requiring an MSDS becomes present in an amount exceeding the threshold established in § 370.20(b).

(d) *Submission of MSDS upon request.* The owner or operator of a facility that has not submitted the MSDS for a hazardous chemical present at the facility shall submit the MSDS for any such hazardous chemical to the committee upon its request. The MSDS shall be submitted within 30 days of the receipt of such request.

§ 370.25 Inventory reporting.

(a) *Basic requirement.* The owner or operator of a facility subject to this

Subpart shall submit an inventory orm to the commission, the commitee, and the fire department with juisdiction over the facility. The invenory form containing Tier I informaion on hazardous chemicals present at the facility during the preceding calendar year above the threshold levels established in § 370.20(b) shall be submitted on or before March 1 of each year, beginning in 1988.

(b) *Alternative reporting.* With respect to any specific hazardous chemical at the facility, the owner or operator may submit a Tier II form in lieu of the Tier I information.

(c) *Submission of Tier II information.* The owner or operator of a facility subject to this Section shall submit the Tier II form to the commission, committee, or the fire department having jurisdiction over the facility upon request of such persons. The Tier II form shall be submitted within 30 days of the receipt of each request.

(d) *Fire department inspection.* The owner or operator of a facility that has submitted an inventory form under this section shall allow on-site inspection by the fire department having jurisdiction over the facility upon request of the department, and shall provide to the department specific location information on hazardous chemicals at the facility.

§ 370.28 Mixtures.

(a) *Basic reporting.* The owner or operator of a facility may meet the reporting requirements of §§ 370.21 (MSDS reporting) and 370.25 (inventory form reporting) of this Subpart for a hazardous chemical that is a mixture of hazardous chemicals by:

(1) Providing the required information on each component in the mixture which is a hazardous chemical, or

(2) Providing the required information on the mixture itself, so long as the reporting of mixtures by a facility under § 370.21 is in the same manner as under § 370.25, where practicable.

(b) *Calculation of the quantity.* (1) If the reporting is on each component of the mixture which is a hazardous chemical, then the concentration of the hazardous chemical, in weight percent (greater than 1% or 0.1% if carcinogenic) shall be multiplied by the mass (in pounds) of the mixture to determine the quantity of the hazardous chemical in the mixture.

(2) If the reporting is on the mixture itself, the total quantity of the mixture shall be reported.

Subpart C—Public Access and Availability of Information

§ 370.30 Requests for information.

(a) *Request for MSDS information.* (1) Any person may obtain an MSDS with respect to a specific facility by submitting a written request to the committee.

(2) If the committee does not have in its possession the MSDS requested in paragraph (a)(1) of this section, it shall request a submission of the MSDS from the owner or operator of the facility that is the subject of the request.

(b) *Requests for Tier II information.* (1) Any person may request Tier II information with respect to a specific facility by submitting a written request to the commission or committee in accordance with the requirements of this section.

(2) If the committee or commission does not have in its possession the Tier II information requested in paragraph (b)(1) of this section, it shall request a submission of the Tier II form from the owner or operator of the facility that is the subject of the request, provided that the request is from a State or local official acting in his or her official capacity or the request is limited to hazardous chemicals stored at the facility in an amount in excess of 10,000 pounds.

(3) If the request under paragraph (b)(1) of this section does not meet the requirements of paragraph (b)(2) of this section, the committee or commission may request submission of the Tier II form from the owner or operator of the facility that is the subject of the request if the request under paragraph (b)(1) of this section includes a general statement of need.

§ 370.31 Provision of information.

All information obtained from an owner or operator in response to a request under this subpart and any requested Tier II form or MSDS otherwise in possession of the commission or the committee shall be made available to the person submitting the request under this Subpart; provided upon request of the owner or operator, the commission or committee shall withhold from disclosure the location of any specific chemical identified in the Tier II form.

Subpart D—Inventory Forms

§ 370.40 Tier I emergency and hazardous chemical inventory form.

(a) The form set out in paragraph (b) of this section shall be completed and submitted as required in § 370.25(a). In lieu of the form set out in paragraph (b) of this section, the facility owner or operator may submit a State or local form that contains identical content.

(b) Tier I Emergency and Hazardous Chemical Inventory Form.

Page ____ of ____ pages
Form Approved OMB No. 2050-0072

Tier One EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY

Aggregate Information by Hazard Type

FOR OFFICIAL USE ONLY
ID # ____
Date Received ____

mportant: Read instructions before completing form

Reporting Period From January 1 to December 31, 19____

Facility Identification

Name ____
Street Address ____
City ____ State ____ Zip ____
SIC Code ☐☐☐☐ Dun & Brad Number ☐☐-☐☐☐-☐☐☐☐

Owner/Operator

Name ____
Mail Address ____
Phone ( ) ____

Emergency Contacts

Name ____
Title ____
Phone ( ) ____
24 Hour Phone ( ) ____

Name ____
Title ____
Phone ( ) ____
24 Hour Phone ( ) ____

☐ Check if site plan is attached

	Hazard Type	*Max Amount**	*Average Daily Amount**	*Number of Days On-Site*	*General Location*
Physical Hazards	Fire	☐☐	☐☐	☐☐☐	
	Sudden Release of Pressure	☐☐	☐☐	☐☐☐	
	Reactivity	☐☐	☐☐	☐☐☐	
Health Hazards	Immediate (acute)	☐☐	☐☐	☐☐☐	
	Delayed (Chronic)	☐☐	☐☐	☐☐☐	

Certification *(Read and sign after completing all sections)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

____
Name and official title of owner/operator OR owner/operator's authorized representative

____
Signature

____
Date signed

* Reporting Ranges

Range Value	Weight Range in Pounds From...	To...
00	0	99
01	100	999
02	1000	9,999
03	10,000	99,999
04	100,000	999,999
05	1,000,000	9,999,999
06	10,000,000	49,999,999
07	50,000,000	99,999,999
08	100,000,000	499,999,999
09	500,000,000	999,999,999
10	1 billion	higher than 1 billion

TIER ONE INSTRUCTIONS

GENERAL INFORMATION

Submission of this form is required by Title III of the Superfund Amendments and Reauthorization Act of 1986, Section 312, Public Law 99-499.

The purpose of this form is to provide State and local officials and the public with information on the general types and locations of hazardous chemicals present at your facility during the past year.

YOU MUST PROVIDE ALL INFORMATION REQUESTED ON THIS FORM.

> You may substitute the Tier Two form for this Tier One form. (The Tier Two form provides detailed information and must be submitted in response to a specific request from State or local officials.)

WHO MUST SUBMIT THIS FORM

Section 312 of Title III requires that the owner or operator of a facility submit this form if, under regulations implementing the Occupational Safety and Health Act of 1970, the owner or operator is required to prepare or have available Material Safety Data Sheets (MSDS) for hazardous chemicals present at the facility. MSDS requirements are specified in the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, found in Title 29 of the Code of Federal Regulations at §1910.1200.

WHAT CHEMICALS ARE INCLUDED

You must report the information required on this form for every hazardous chemical for which you are required to prepare or have available an MSDS under the Hazard Communication Standard. However, OSHA regulations and Title III exempt some chemicals from reporting.

Section 1910.1200(b) of the OSHA regulations currently provides the following exemptions:

(i) Any hazardous waste as such term is defined by the Solid Waste Disposal Act, as amended (42 U.S.C. 6901 et seq.) when subject to regulations issued under that Act;

(ii) Tobacco or tobacco products;

(iii) Wood or wood products;

(iv) "Articles" - defined under §1910.1200 (b) as a manufactured item:

- Which is formed to a specific shape or design during manufacture;
- Which has end use function(s) dependent in whole or in part upon the shape or design during end use; and
- Which does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

(v) Food, drugs, cosmetics or alcoholic beverages in a retail establishment which are packaged for sale to consumers;

(vi) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace;

(vii) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 1251 *et seq.*) respectively, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers; and

(viii) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 *et seq.*), when it is in solid, final form for direct administration to the patient (i.e., tablets or pills).

In addition, Section 311(e) of Title III excludes the following substances:

(i) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration;

(ii) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use;

(iii) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public;

(iv) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual;

(v) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

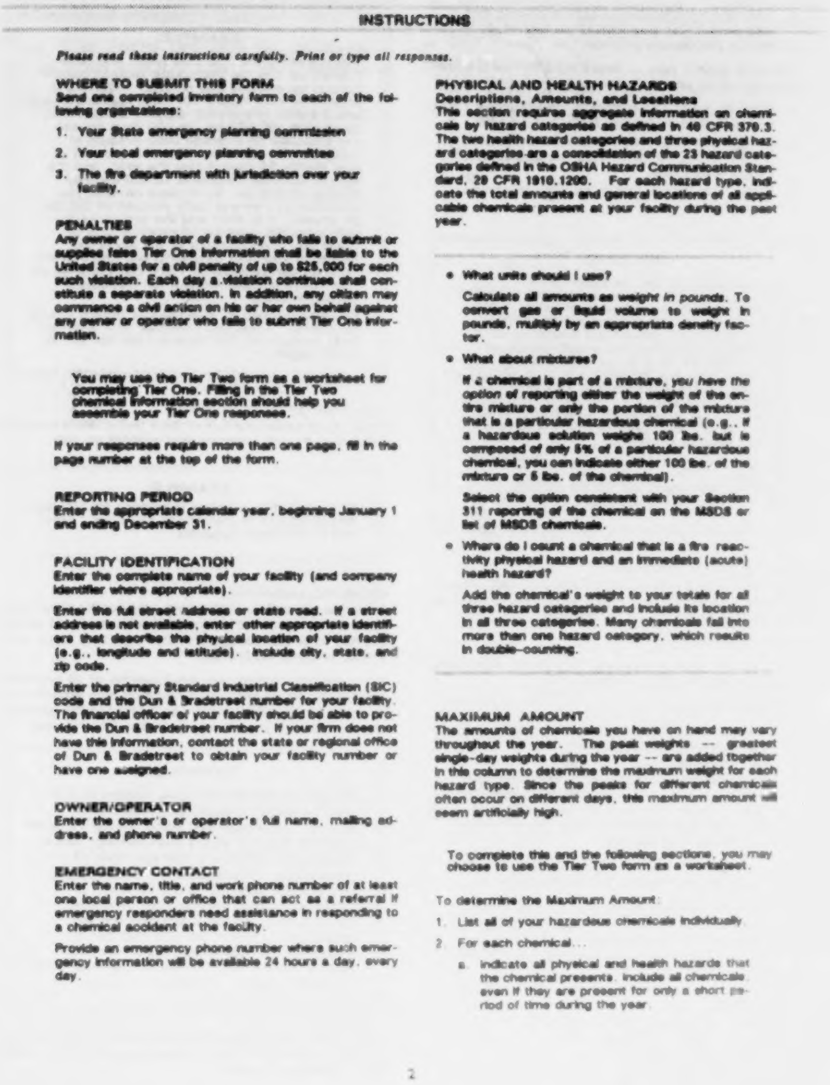
Also, minimum reporting thresholds have been established under Title III, Section 312. You need to report only those hazardous chemicals that were present at your facility at any time during the preceding calendar year at or above the levels listed below:

- January to December 1987
  (or first year of reporting) ...10,000 lbs.
- January to December 1988
  (or second year of reporting) ...10,000 lbs.
- January to December 1989
  (or third year of reporting) ...zero lbs.*

  * EPA will publish the final threshold, effective in the third year, after additional analysis.
- For extremely hazardous substances...500 lbs. or the threshold planning quantity, whichever is less, from the first year of reporting and thereafter.

WHEN TO SUBMIT THIS FORM

Beginning March 1, 1988, owners or operators must submit the Tier One form (or substitute the Tier Two form) on or before March 1 of every year.



INSTRUCTIONS

Please read these instructions carefully. Print or type all responses.

WHERE TO SUBMIT THIS FORM

Send one completed inventory form to each of the following organizations:

1. Your State emergency planning commission
2. Your local emergency planning committee
3. The fire department with jurisdiction over your facility.

PENALTIES

Any owner or operator of a facility who fails to submit or supplies false Tier One information shall be liable to the United States for a civil penalty of up to $25,000 for each such violation. Each day a violation continues shall constitute a separate violation. In addition, any citizen may commence a civil action on his or her own behalf against any owner or operator who fails to submit Tier One information.

> You may use the Tier Two form as a worksheet for completing Tier One. Filling in the Tier Two chemical information section should help you assemble your Tier One responses.

If your responses require more than one page, fill in the page number at the top of the form.

REPORTING PERIOD

Enter the appropriate calendar year, beginning January 1 and ending December 31.

FACILITY IDENTIFICATION

Enter the complete name of your facility (and company identifier where appropriate).

Enter the full street address or state road. If a street address is not available, enter other appropriate identifiers that describe the physical location of your facility (e.g., longitude and latitude). Include city, state, and zip code.

Enter the primary Standard Industrial Classification (SIC) code and the Dun & Bradstreet number for your facility. The financial officer of your facility should be able to provide the Dun & Bradstreet number. If your firm does not have this information, contact the state or regional office of Dun & Bradstreet to obtain your facility number or have one assigned.

OWNER/OPERATOR

Enter the owner's or operator's full name, mailing address, and phone number.

EMERGENCY CONTACT

Enter the name, title, and work phone number of at least one local person or office that can act as a referral if emergency responders need assistance in responding to a chemical accident at the facility.

Provide an emergency phone number where such emergency information will be available 24 hours a day, every day.

PHYSICAL AND HEALTH HAZARDS
Descriptions, Amounts, and Locations

This section requires aggregate information on chemicals by hazard categories as defined in 40 CFR 370.3. The two health hazard categories and three physical hazard categories are a consolidation of the 23 hazard categories defined in the OSHA Hazard Communication Standard, 29 CFR 1910.1200. For each hazard type, indicate the total amounts and general locations of all applicable chemicals present at your facility during the past year.

- **What units should I use?**

  Calculate all amounts as weight *in pounds*. To convert gas or liquid volume to weight in pounds, multiply by an appropriate density factor.

- **What about mixtures?**

  If a chemical is part of a mixture, you have the option of reporting either the weight of the entire mixture or only the portion of the mixture that is a particular hazardous chemical (e.g., if a hazardous solution weighs 100 lbs. but is composed of only 5% of a particular hazardous chemical, you can indicate either 100 lbs. of the mixture or 5 lbs. of the chemical).

  Select the option consistent with your Section 311 reporting of the chemical on the MSDS or list of MSDS chemicals.

- **Where do I count a chemical that is a fire reactivity physical hazard and an immediate (acute) health hazard?**

  Add the chemical's weight to your totals for all three hazard categories and include its location in all three categories. Many chemicals fall into more than one hazard category, which results in double-counting.

MAXIMUM AMOUNT

The amounts of chemicals you have on hand may vary throughout the year. The peak weights -- greatest single-day weights during the year -- are added together in this column to determine the maximum weight for each hazard type. Since the peaks for different chemicals often occur on different days, this maximum amount will seem artificially high.

> To complete this and the following sections, you may choose to use the Tier Two form as a worksheet.

To determine the Maximum Amount:

1. List all of your hazardous chemicals individually.
2. For each chemical...
   a. Indicate all physical and health hazards that the chemical presents. Include all chemicals, even if they are present for only a short period of time during the year.

  b. Estimate the maximum weight in pounds that was present at your facility on any single day of the reporting period.

3. For each hazard type -- beginning with Fire and repeating for all physical and health hazard types...

  a. Add the maximum weights of all chemicals you indicated as the particular hazard type.
  b. Look at the Reporting Ranges at the bottom of the Tier One form. Find the appropriate range value code.
  c. Enter this range value as the Maximum Amount.

EXAMPLE:

You are using the Tier Two form as a worksheet and have listed raw weights in pounds for each of your hazardous chemicals. You have marked an X in the Immediate (acute) hazard column for phenol and sulfuric acid. The maximum amount raw weight you listed were 10,000 lbs. and 50 lbs. respectively. You add these together to reach a total of 10,050 lbs. Then you look at the Reporting Range at the bottom of your Tier One form and find that the value of 03 corresponds to 10,050 lbs. Enter 03 as your Maximum Amount for Immediate (acute) hazards materials.

You also marked an X in the Fire hazard box for phenol. When you calculate your Maximum Amount totals for fire hazards, add the 10,000 lb. weight again.

AVERAGE DAILY AMOUNT

This column should represent the average daily amount of chemicals *of each hazard type* that were present at your facility at any point during the year.

To determine this amount:

1. List all of your hazardous chemicals individually (same as for Maximum Amount).
2. For each chemical...
  a. Indicate all physical and health hazards that the chemical presents (same as for Maximum Amount).
  b. Estimate the average weight in pounds that was present at your facility throughout the year. To do this, total all daily weights and divide by the number of days the chemical was present on the site.
3. For each hazard type -- beginning with Fire and repeating for all physical and health hazards...
  a. Add the average weights of all chemicals you indicated for the particular hazard type.
  b. Look at the Reporting Ranges at the bottom of the Tier One form. Find the appropriate range value code.
  c. Enter this range value as the Average Daily Amount.

EXAMPLE:

You are using the Tier Two form, and have marked an X in the Immediate (acute) hazard column for nicotine and phenol. Nicotine is present at your facility 100 drys during the year, and the sum of the daily weights is 100,000 lbs. By dividing 100,000 lbs. by 100 days on-site, you calculate an Average Daily Amount of 1,000 lbs. for nicotine. Phenol is present at your facility 50 days during the year, and the sum of the daily weights is 10,000 lbs. By dividing 10,000 lbs. 5y 50 days on-site, you calculate an Average Daily Amount of 200 lbs. for phenol. You then add the two average daily amounts together to reach a total of 1,200 lbs. Then you look at the Reporting Range on your Tier One form and find that the value 02 corresponds to 1,200 lbs. Enter 02 as your Average Daily Amount for Immediate (acute) Hazard.

You also marked an X in the Fire hazard column for phenol. When you calculate your Average Daily Amount for fire hazards, use the 200 lb. weight again.

NUMBER OF DAYS ON-SITE

Enter the greatest number of days that a single chemical within that hazard category was present on-site.

EXAMPLE:

At your facility, nicotine is present for 100 days and phosgene is present for 150 days. Enter 150 in the space provided.

GENERAL LOCATION

Enter the general location within your facility where each hazard may be found. General locations should include the names or identifications of buildings, tank fields, lots, sheds, or other such areas.

For each hazard type, list the locations of all applicable chemicals. As an alternative you may also attach a site plan and list the site coordinates related to the appropriate locations. If you do so, check the Site Plan box.

EXAMPLE:

On your worksheet you have marked an X in the Fire hazard column for acetone and butane. You noted that these are kept in steel drums in Room C of the Main Building, and in pressurized cylinders in Storage Shed 13, respectively. You could enter Main Building and Storage Shed 13 as the General Locations of your fire hazards. However, you choose to attach a site plan and list coordinates. Check the Site Plan box at the top of the column and enter site coordinates for the Main Building and Storage Shed 13 under General Locations.

If you need more space to list locations, attach an additional Tier One form and continue your list on the proper line. Number all pages.

CERTIFICATION

This must be completed by the owner or operator or the officially designated representative of the owner or operator. Enter your full name and official title. Sign your name and enter the current date.

§ 370.41 Tier II emergency and hazardous chemical inventory form.

(a) The form set out in paragraph (b) of this section must be completed and submitted as required in § 370.25(c). In lieu of the form set out in paragraph (b) of this section, the facility owner or operator may submit a State or local form that contains identical content.

(b) Tier II Emergency and Hazardous Chemical Inventory Form.

Page _____ of _____ pages
Form Approved OMB No. 2050-0072

Tier Two
EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY
Specific Information by Chemical

Facility Identification
Name ____________________
Street Address ____________________
City ____________________ State ______ Zip ______
SIC Code ☐☐☐☐ Dun & Brad Number ☐☐-☐☐☐-☐☐☐☐

FOR OFFICIAL USE ONLY
ID # ____________________
Date Received ____________________

Owner/Operator Name
Name ____________________ Phone ( ) ____________
Mail Address ____________________

Emergency Contact
Name ____________________ Title ____________________
Phone ( ) ____________ 24 Hr. Phone ( ) ____________
Name ____________________ Title ____________________
Phone ( ) ____________ 24 Hr. Phone ( ) ____________

Important: Read all instructions before completing form

Reporting Period From January 1 to December 31, 19____

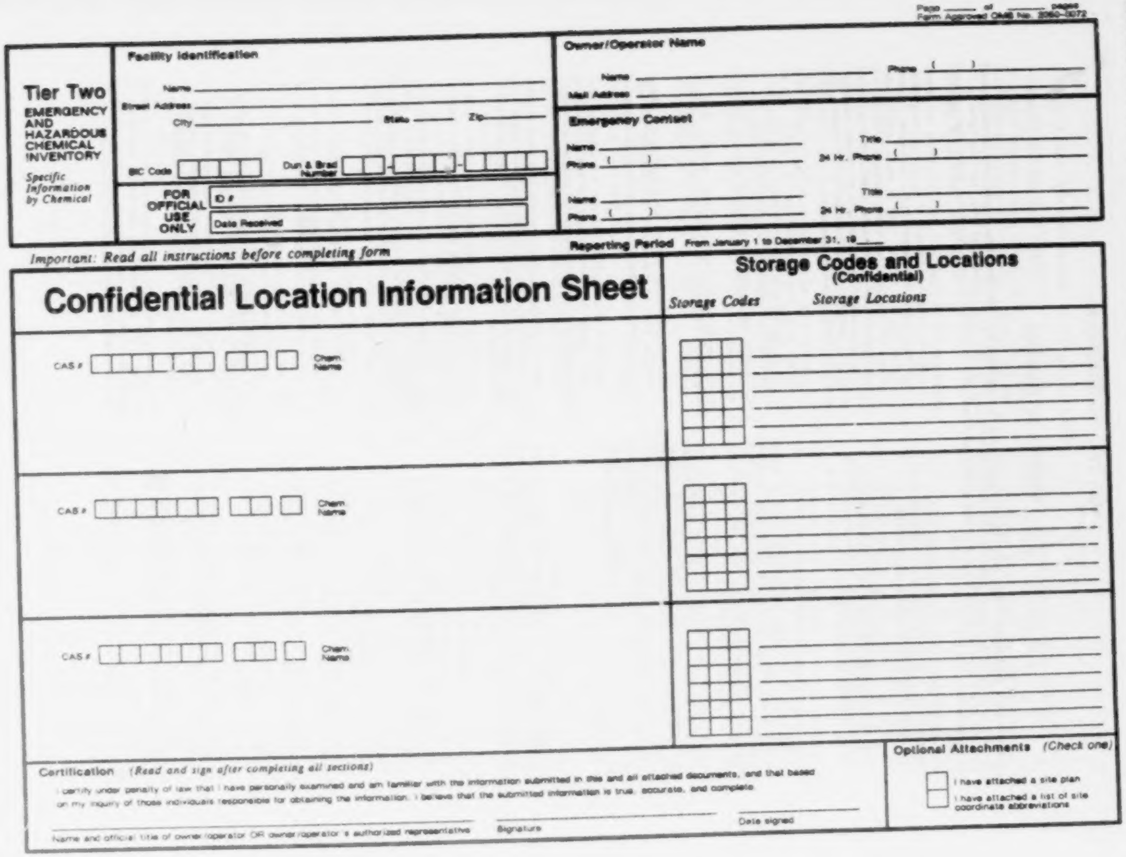
Chemical Description	Physical and Health Hazards (check all that apply)	Inventory: Max. Daily Amount (code)	Inventory: Avg. Daily Amount (code)	Inventory: No. of Days On-site (days)	Storage Codes and Locations (Non-Confidential): *Storage Code*	*Storage Locations*
CAS ☐☐☐☐☐☐-☐☐-☐ Trade Secret ☐ Chem. Name ____________________ *Check all that apply:* ☐ Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas	☐ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic)	☐☐	☐☐	☐☐☐	☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐	____________________
CAS ☐☐☐☐☐☐-☐☐-☐ Trade Secret ☐ Chem. Name ____________________ *Check all that apply:* ☐ Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas	☐ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic)	☐☐	☐☐	☐☐☐	☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐	____________________
CAS ☐☐☐☐☐☐-☐☐-☐ Trade Secret ☐ Chem. Name ____________________ *Check all that apply:* ☐ Pure ☐ Mix ☐ Solid ☐ Liquid ☐ Gas	☐ Fire ☐ Sudden Release of Pressure ☐ Reactivity ☐ Immediate (acute) ☐ Delayed (chronic)	☐☐	☐☐	☐☐☐	☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐ ☐☐☐	____________________

Certification *(Read and sign after completing all sections)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

____________________ Name and official title of owner/operator OR owner/operator's authorized representative
____________________ Signature
____________________ Date signed

Optional Attachments *(Check one)*
☐ I have attached a site plan
☐ I have attached a list of site coordinate abbreviations



Page ______ of ______ pages
Form Approved OMB No. 2050-0072

Tier Two
EMERGENCY AND HAZARDOUS CHEMICAL INVENTORY
Specific Information by Chemical

Facility Identification

Name ______
Street Address ______
City ______ State ______ Zip ______
SIC Code ☐☐☐☐ Dun & Brad Number ☐☐-☐☐☐-☐☐☐☐

FOR OFFICIAL USE ONLY
ID # ______
Date Received ______

Owner/Operator Name

Name ______ Phone ( ) ______
Mail Address ______

Emergency Contact

Name ______ Title ______
Phone ( ) ______ 24 Hr. Phone ( ) ______
Name ______ Title ______
Phone ( ) ______ 24 Hr. Phone ( ) ______

Important: Read all instructions before completing form

Reporting Period From January 1 to December 31, 19____

Confidential Location Information Sheet	Storage Codes and Locations (Confidential) *Storage Codes* *Storage Locations*
CAS # ☐☐☐☐☐☐☐ ☐☐☐ ☐ Chem. Name	
CAS # ☐☐☐☐☐☐☐ ☐☐☐ ☐ Chem. Name	
CAS # ☐☐☐☐☐☐☐ ☐☐☐ ☐ Chem. Name	

Certification *(Read and sign after completing all sections)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner/operator OR owner/operator's authorized representative ______ Signature ______ Date signed ______

Optional Attachments *(Check one)*

☐ I have attached a site plan
☐ I have attached a list of site coordinate abbreviations

TIER TWO INSTRUCTIONS

GENERAL INFORMATION

Submission of this Tier Two form (when requested) is required by Title III of the Superfund Amendments and Reauthorization Act of 1986, Section 312, Public Law 99-499. The purpose of this Tier Two form is to provide State and local officials and the public with specific information on hazardous chemicals present at your facility during the past year.

YOU MUST PROVIDE ALL INFORMATION
REQUESTED ON THIS FORM TO FULFILL
TIER TWO REPORTING REQUIREMENTS.

This form may also be used as a worksheet for completing the Tier One form or may be submitted in place of the Tier One form.

WHO MUST SUBMIT THIS FORM

Section 312 of Title III requires that the owner or operator of a facility submit this Tier Two form if so requested by a State emergency planning commission, a local emergency planning committee, or a fire department with jurisdiction over the facility.

This request may apply to the owner or operator of any facility that is required, under regulations implementing the Occupational Safety and Health Act of 1970, to prepare or have available a Material Safety Data Sheet (MSDS) for a hazardous chemical present at the facility. MSDS requirements are specified in the Occupational Safety and Health Administration (OSHA) Hazard Communications Standard, found in Title 29 of the Code of Federal Regulations at §1910.1200.

WHAT CHEMICALS ARE INCLUDED

You must report the information required on this form for each hazardous chemical for which Tier Two information is requested. However, OSHA regulations and Title III exempt some chemicals from reporting.

Section 1910.1200(b) of the OSHA regulations currently provides the following exemptions:

(i) Any hazardous waste as such term is defined by the Solid Waste Disposal Act as amended (42 U.S.C. 6901 et seq.) when subject to regulations issued under that Act;

(ii) Tobacco or tobacco products;

(iii) Wood or wood products;

(iv) "Articles" - defined under §1910.1200(b) as a manufactured item:

- Which is formed to a specific shape or design during manufacture;
- Which has end use function(s) dependent in whole or in part upon the shape or design during end use; and
- Which does not release, or otherwise result in exposure to a hazardous chemical under normal conditions of use.

(v) Food, drugs, cosmetics or alcoholic beverages in a retail establishment which are packaged for sale to consumers;

(vi) Foods, drugs, or cosmetics intended for personal consumption by employees while in the workplace.

(vii) Any consumer product or hazardous substance, as those terms are defined in the Consumer Product Safety Act (15 U.S.C. 1251 et seq.) respectively, where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers

(viii) Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (i.e., tablets or pills).

In addition, Section 311(e) of Title III excludes the following substances:

(i) Any food, food additive, color additive, drug, or cosmetic regulated by the Food and Drug Administration;

(ii) Any substance present as a solid in any manufactured item to the extent exposure to the substance does not occur under normal conditions of use;

(iii) Any substance to the extent it is used for personal, family, or household purposes, or is present in the same form and concentration as a product packaged for distribution and use by the general public;

(iv) Any substance to the extent it is used in a research laboratory or a hospital or other medical facility under the direct supervision of a technically qualified individual;

(v) Any substance to the extent it is used in routine agricultural operations or is a fertilizer held for sale by a retailer to the ultimate customer.

Also, minimum reporting thresholds have been established for Tier One under Title III, Section 312. You need to report only those hazardous chemicals that were present at your facility at any time during the preceding calendar year at or above the levels listed below:

- January to December 1987
  (or first year of reporting) ...10,000 lbs.
- January to December 1988
  (or second year of reporting) ...10,000 lbs.
- January to December 1989
  (or third year of reporting) ...zero lbs.*

  * EPA will publish the final threshold, effective in the third year, after additional analysis.
- For extremely hazardous substances...500 lbs. or the threshold planning quantity, whichever is less, from the first year of reporting and thereafter.

A requesting official may limit the responses required under Tier Two by specifying particular chemicals or groups of chemicals. Such requests apply to hazardous chemicals regardless of established thresholds.

INSTRUCTIONS

Please read these instructions carefully. Print or type all responses.

WHEN TO SUBMIT THIS FORM

Owners or operators must submit the Tier Two form to the requesting agency within 30 days of receipt of a written request from an authorized official.

WHERE TO SUBMIT THIS FORM

Send the completed Tier Two form to the requesting agency.

PENALTIES

Any owner or operator who violates any Tier Two reporting requirements shall be liable to the United States for a civil penalty of up to $25,000 for each such violation. Each day a violation continues shall constitute a seperate violation.

You may use the Tier Two form as a worksheet for completing the Tier One form. Filling in the Tier Two Chemical Information section should help you assemble your Tier One responses.

If your responses require more than one page, fill in the page number at the top of the form.

REPORTING PERIOD

Enter the appropriate calendar year, beginning January 1 and ending December 31.

FACILITY IDENTIFICATION

Enter the full name of your facility (and company identifier where appropriate).

Enter the full street address or state road. If a street address is not available, enter other appropriate identifiers that describe the physical location of your facility (e.g., longitude and latitude). Include city, state, and zip code.

Enter the primary Standard Industrial Classification (SIC) code and the Dun & Bradstreet number for your facility. The financial officer of your facility should be able to provide the Dun & Bradstreet number. If your firm does not have this information, contact the state or regional office of Dun & Bradstreet to obtain your facility number or have one assigned.

OWNER/OPERATOR

Enter the owner's or operator's full name, mailing address, and phone number.

EMERGENCY CONTACT

Enter the name, title, and work phone number of at least one local person or office who can act as a referral if emergency responders need assistance in responding to a chemical accident at the facility.

Provide an emergency phone number where such emergency chemical information will be available 24 hours a day, every day.

CHEMICAL INFORMATION: Description, Hazards, Amounts, and Locations

The main section of the Tier Two form requires specific information on amounts and locations of hazardous chemicals, as defined in the OSHA Hazard Communication Standard.

- What units should I use?

  Calculate all amounts as *weight in pounds*. To convert gas or liquid volume to weight in pounds, multiply by an appropriate density factor.

- What about mixtures?

  If a chemical is part of a mixture, *you have the option* of reporting either the weight of the entire mixture or only the portion of the mixture that is a particular hazardous chemical (e.g., if a hazardous solution weighs 100 lbs. but is composed of only 5% of a particular hazardous chemical, you can indicate either 100 lbs. of the mixture or 5 lbs. of the chemical.

  Select the option consistent with your Section 311 reporting of the chemical on the MSDS or list of MSDS chemicals.

CHEMICAL DESCRIPTION

1. Enter the Chemical Abstract Service number (CAS#).

   For mixtures, enter the CAS number of the mixture as a whole if it has been assigned a number distinct from its components. For a mixture that has no CAS number, leave this item blank or report the CAS numbers of as many constituent chemicals as possible.

If you are withholding the name of a chemical in accordance with criteria specified in Title III, Section 322, enter the generic chemical class (e.g., list toluene diisocynate as organic isocynate) and check the box marked Trade Secret. Trade secret information should be submitted to EPA and must include a substantiation. Please refer to Section 322 of Title III for detailed information on how to comply with trade secret requests.

2. Enter the chemical name or common name of each hazardous chemical.
3. Circle *ALL* applicable descriptors: pure or mixture, and solid, liquid, or gas.

EXAMPLE:

You have pure chlorine gas on hand, as well as two mixtures that contain liquid chlorine. You write "chlorine" and enter the CAS#. Then you circle "pure" and "mix" -- as well as "liq" and "gas".

PHYSICAL AND HEALTH HAZARDS

For each chemical you have listed, check all the physical and health hazard boxes that apply. These hazard categories are defined in 40 CFR 370.3. The two health hazard categories and three physical hazard categories are a consolidation of the 23 hazard categories defined in the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MAXIMUM AMOUNT

1. For each hazardous chemical, estimate the greatest amount present at your facility on any single day during the reporting period.
2. Find the appropriate range value code in Table I.
3. Enter this range value as the Maximum Amount.

Table I **REPORTING RANGES**

Range Value	Weight Range in Pounds From...	 To...
00	0	99
01	100	999
02	1,000	9,999
03	10,000	99,999
04	100,000	999,999
05	1,000,000	9,999,999
06	10,000,000	49,999,999
07	50,000,000	99,999,999
08	100,000,000	499,999,999
09	500,000,000	999,999,999
10	1 billion	higher than 1 billion

If you are using this form as a worksheet for completing Tier One, enter the actual weight in pounds in the shaded space below the response blocks. Do this for both Maximum Amount and Average Daily Amount.

EXAMPLE:

You received one large shipment of a solvent mixture last year. The shipment filled your 5,000-gallon storage tank. You know that the solvent contains 10% benzene, which is a hazardous chemical.

You figure that 10% of 5,000 gallons is 500 gallons. You also know that the density of benzene is 7.29 pounds per gallon, so you multiply 500 by 7.29 to get a weight of 3,645 pounds.

Then you look at Table I and find that the range value 02 corresponds to 3,645. You enter 02 as the Maximum Amount.

(If you are using the form as a worksheet for completing a Tier One form, you should write 3,645 in the shaded area.)

AVERAGE DAILY AMOUNT

1. For each hazardous chemical, estimate the average weight in pounds that was present at your facility during the year.

   To do this, total all daily weights and divide by the number of days the chemical was present on the site.
2. Find the appropriate range value in Table I.
3. Enter this range value as the Average Daily Amount.

EXAMPLE:

The 5,000-gallon shipment of solvent you received last year was gradually used up and completely gone in 315 days. The sum of the daily volume levels in the tank is 929,250 gallons. By dividing 929,250 gallons by 315 days on-site, you calculate an average daily amount of 2,950 gallons.

You already know that the solvent contains 10% benzene, which is a hazardous chemical. Since 10% of 2,950 is 295, you figure that you had an average of 295 gallons of benzene. You also know that the density of benzene is 7.29 pounds per gallon, so you multiply 295 by 7.29 to get a weight of 2,150 pounds.

Then you look at Table I and find that the range value 02 corresponds to 2,150. You enter 02 as the Average Daily Amount.

(If you are using the form as a worksheet for completing a Tier One form, you should write 2,150 in the shaded area.)

NUMBER OF DAYS ON-SITE

Enter the number of days that the hazardous chemical was found on-site.

EXAMPLE:

The solvent composed of 10% benzene was present for 315 days at your facility. Enter 315 in the space provided.

STORAGE CODES AND STORAGE LOCATIONS

List all non-confidential chemical locations in this column, along with storage types/conditions associated with each location.

Storage Codes: Indicate the types and conditions of storage present.

- a. *Look at Table II.* For each location, find the appropriate storage type(s). Enter the corresponding code(s) in front of the parentheses.
- b. *Look at Table III.* For each storage type, find the temperature and pressure conditions. Enter the applicable pressure code in the first space within the parentheses. Enter the applicable temperature code in the last space within the parentheses.

Table II - STORAGE TYPES

CODES	Types of Storage
A	Above ground tank
B	Below ground tank
C	Tank inside building
D	Steel drum
E	Plastic or non-metallic drum
F	Can
G	Carboy
H	Silo
I	Fiber drum
J	Bag
K	Box
L	Cylinder
M	Glass bottles or jugs
N	Plastic bottles or jugs
O	Tote bin
P	Tank wagon
Q	Rail car
R	Other

Table III - TEMPERATURE AND PRESSURE CONDITIONS

CODES	Storage Conditions
	(PRESSURE)
1	Ambient pressure
2	Greater than ambient pressure
3	Less than ambient pressure
	(TEMPERATURE)
4	Ambient temperature
5	Greater than ambient temperature
6	Less than ambient temperature but not cryogenic
7	Cryogenic conditions

EXAMPLE:

The benzene in the main building is kept in a tank inside the building, at ambient pressure and less than ambient temperature.

Table II shows you that the code for a tank inside a building is C. Table III shows you that code for ambient pressure is 1, and the code for less than ambient temperature is 6.

You enter: C(1,6)

Storage Locations:

Provide a brief description of the precise location of the chemical, so that emergency responders can locate the area easily. You may find it advantageous to provide the optional site plan or site coordinates as explained below.

For each chemical, indicate at a minimum the building or lot. Additionally, where practical, the room or area may be indicated. You may respond in narrative form with appropriate site coordinates or abbreviations.

If the chemical is present in more than one building, lot, or area location, continue your responses down the page as needed. If the chemical exists everywhere at the plant site simultaneously, you may report that the chemical is ubiquitous at the site.

Optional attachments: If you choose to attach one of the following, check the appropriate Attachments box at the bottom of the Tier Two form.

a. *A site plan* with site coordinates indicated for buildings, lots, areas, etc. throughout your facility.

b. *A list of site coordinate abbreviations* that correspond to buildings, lots, areas, etc. throughout your facility.

EXAMPLE:

You have benzene in the main room of the main building, and in tank 2 in tank field 10. You attach a site plan with coordinates as follows: main building = G-2, tank field 10 = B-6. Fill in the Storage Location as follows:

B-6 [Tank 2] G-2 [Main Room]

Under Title III, Section 324, you may elect to withhold location information on a specific chemical from disclosure to the public. If you choose to do so:

- Enter the word "confidential" in the Non-Confidential Location section of the Tier Two form.
- On a separate Tier Two Confidential Location Information Sheet, enter the name and CAS# of each chemical for which you are keeping the location confidential.
- Enter the appropriate location and storage information, as described above for non-confidential locations.
- Attach the Tier Two Confidential Location Information Sheet to the Tier Two form. This separates confidential locations from other information that will be disclosed to the public.

CERTIFICATION.

This must be completed by the owner or operator or the officially designated representative of the owner or operator. Enter your full name and official title. Sign your name and enter the current date.

PART 372—TOXIC CHEMICAL RELEASE REPORTING: COMMUNITY RIGHT-TO-KNOW

Subpart A—General Provisions

Sec.
372.1 Scope and purpose.
372.3 Definitions.
372.5 Persons subject to this part.
372.10 Recordkeeping.
372.18 Compliance and enforcement.

Subpart B—Reporting Requirements

372.22 Covered facilities for toxic chemical release reporting.
372.25 Thresholds for reporting.
372.30 Reporting requirements and schedule for reporting.
372.38 Exemptions.

Subpart C—Supplier Notification Requirements

372.45 Notification about toxic chemicals.

Subpart D—Specific Toxic Chemical Listings

372.65 Chemicals and chemical categories to which this part applies.

Subpart E—Forms and Instructions

372.85 Toxic chemical release reporting form and instructions.

AUTHORITY: 42 U.S.C. 11013, 11028.

SOURCE: 53 FR 4525, Feb. 16, 1988, unless otherwise noted.

Subpart A—General Provisions

§ 372.1 Scope and purpose.

This part sets forth requirements for the submission of information relating to the release of toxic chemicals under section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986. The information collected under this part is intended to inform the general public and the communities surrounding covered facilities about releases of toxic chemicals, to assist research, to aid in the development of regulations, guidelines, and standards, and for other purposes. This part also sets forth requirements for suppliers to notify persons to whom they distribute mixtures or trade name products containing toxic chemicals that they contain such chemicals.

§ 372.3 Definitions.

Terms defined in sections 313(b)(1)(c) and 329 of Title III and not explicitly defined herein are used with the meaning given in Title III. For the purpose of this part:

"*Acts*" means Title III.

"*Article*" means a manufactured item: (1) Which is formed to a specific shape or design during manufacture; (2) which has end use functions dependent in whole or in part upon its shape or design during end use; and (3) which does not release a toxic chemical under normal conditions of processing or use of that item at the facility or establishments.

"*Customs territory of the United States*" means the 50 States, the District of Columbia, and Puerto Rico.

"*EPA*" means the United States Environmental Protection Agency.

"*Establishment*" means an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed.

"*Facility*" means all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with such person). A facility may contain more than one establishment.

"*Full-time employee*" means 2,000 hours per year of full-time equivalent employment. A facility would calculate the number of full-time employees by totaling the hours worked during the calendar year by all employees, including contract employees, and dividing that total by 2,000 hours.

"*Import*" means to cause a chemical to be imported into the customs territory of the United States. For purposes of this definition, "to cause" means to intend that the chemical be imported and to control the identity of the imported chemical and the amount to be imported.

"*Manufacture*" means to produce, prepare, import, or compound a toxic chemical. Manufacture also applies to a toxic chemical that is produced coincidentally during the manufacture, processing, use, or disposal of another chemical or mixture of chemicals, including a toxic chemical that is separated from that other chemical or mixture of chemicals as a byproduct, and a toxic chemical that remains in that other chemical or mixture of chemicals as an impurity.

"*Mixture*" means any combination of two or more chemicals, if the combination is not, in whole or in part, the result of a chemical reaction. However, if the combination was produced by a chemical reaction but could have been produced without a chemical reaction, it is also treated as a mixture. A mixture also includes any combination which consists of a chemical and associated impurities.

"*Otherwise use*" or "*use*" means any use of a toxic chemical that is not covered by the terms "manufacture" or "process" and includes use of a toxic chemical contained in a mixture or trade name product. Relabeling or redistributing a container of a toxic chemical where no repackaging of the toxic chemical occurs does not constitute use or processing of the toxic chemical.

"*Process*" means the preparation of a toxic chemical, after its manufacture, for distribution in commerce:

(1) In the same form or physical state as, or in a different form or physical state from, that in which it was received by the person so preparing such substance, or

(2) As part of an article containing the toxic chemical. Process also applies to the processing of a toxic chemical contained in a mixture or trade name product.

"*Release*" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles) of any toxic chemical.

"*Senior management official*" means an official with management responsibility for the person or persons completing the report, or the manager of environmental programs for the facility or establishments, or for the corporation owning or operating the facility or establishments responsible for certifying similar reports under other environmental regulatory requirements.

"*Title III*" means Title III of the Superfund Amendments and Reauthorization Act of 1986, also titled the Emergency Planning and Community Right-To-Know Act of 1986.

"*Toxic chemical*" means a chemical or chemical category listed in § 372.65.

"*Trade name product*" means a chemical or mixture of chemicals that is distributed to other persons and that incorporates a toxic chemical component that is not identified by the applicable chemical name or Chemical Abstracts Service Registry number listed in § 372.65.

§ 372.5 Persons subject to this part.

Owners and operators of facilities described in §§ 372.22 and 372.45 are subject to the requirements of this part. If the owner and operator of a facility are different persons, only one need report under § 372.17 or provide a notice under § 372.45 for each toxic chemical in a mixture or trade name product distributed from the facility. However, if no report is submitted or notice provided, EPA will hold both the owner and the operator liable under section 325(c) of Title III, except as provided in §§ 372.38(e) and 372.45(g).

§ 372.10 Recordkeeping.

(a) Each person subject to the reporting requirements of this part must retain the following records for a period of 3 years from the date of the submission of a report under § 372.30:

(1) A copy of each report submitted by the person under § 372.30.

(2) All supporting materials and documentation used by the person to make the compliance determination that the facility or establishments is a covered facility under § 372.22 or § 372.45.

(3) Documentation supporting the report submitted under § 372.30 including:

(i) Documentation supporting any determination that a claimed allowable exemption under § 372.38 applies.

(ii) Data supporting the determination of whether a threshold under

§ 372.25 applies for each toxic chemical.

(iii) Documentation supporting the calculations of the quantity of each toxic chemical released to the environment or transferred to an off-site location.

(iv) Documentation supporting the use indications and quantity on site reporting for each toxic chemical, including dates of manufacturing, processing, or use.

(v) Documentation supporting the basis of estimate used in developing any release or off-site transfer estimates for each toxic chemical.

(vi) Receipts or manifests associated with the transfer of each toxic chemical in waste to off-site locations.

(vii) Documentation supporting reported waste treatment methods, estimates of treatment efficiencies, ranges of influent concentration to such treatment, the sequential nature of treatment steps, if applicable, and the actual operating data, if applicable, to support the waste treatment efficiency estimate for each toxic chemical.

(b) Each person subject to the notification requirements of this part must retain the following records for a period of 3 years from the date of the submission of a notification under § 372.45.

(1) All supporting materials and documentation used by the person to determine whether a notice is required under § 372.45.

(2) All supporting materials and documentation used in developing each required notice under § 372.45 and a copy of each notice.

(c) Records retained under this section must be maintained at the facility to which the report applies or from which a notification was provided. Such records must be readily available for purposes of inspection by EPA.

§ 372.18 Compliance and enforcement.

Violators of the requirements of this part shall be liable for a civil penalty in an amount not to exceed $25,000 each day for each violation as provided in section 325(c) of Title III.

Subpart B—Reporting Requirements

§ 372.22 Covered facilities for toxic chemical release reporting.

A facility that meets all of the following criteria for a calendar year is a covered facility for that calendar year and must report under § 372.30.

(a) The facility has 10 or more full-time employees.

(b) The facility is in Standard Industrial Classification Codes 20 through 39 (as in effect on January 1, 1987) by virtue of the fact that it meets one of the following criteria:

(1) The facility is an establishment with a primary SIC code of 20 through 39.

(2) The facility is a multi-establishment complex where all establishments have a primary SIC code of 20 through 39.

(3) The facility is a multi-establishment complex in which one of the following is true:

(i) The sum of the value of products shipped and/or produced from those establishments that have a primary SIC code of 20 through 39 is greater than 50 percent of the total value of all products shipped and/or produced from all establishments at the facility.

(ii) One establishment having a primary SIC code of 20 through 39 contributes more in terms of value of products shipped and/or produced than any other establishment within the facility.

(c) The facility manufactured (including imported), processed, or otherwise used a toxic chemical in excess of an applicable threshold quantity of that chemical set forth in § 372.25.

§ 372.25 Thresholds for reporting.

The threshold amounts for purposes of reporting under § 372.30 for toxic chemicals are as follows:

(a) With respect to a toxic chemical manufactured (including imported) or processed at a facility during the following calendar years:

1987—75,000 pounds of the chemical manufactured or processed for the year.

1988—50,000 pounds of the chemical manufactured or processed for the year.

1989 and thereafter—25,000 pounds of the chemical manufactured or processed for the year.

(b) With respect to a chemical otherwise used at a facility, 10,000 pounds of the chemical used for the applicable calendar year.

(c) With respect to activities involving a toxic chemical at a facility, when more than one threshold applies to the activities, the owner or operator of the facility must report if it exceeds any applicable threshold and must report on all activities at the facility involving the chemical, except as provided in § 372.38.

(d) When a facility manufactures, processes, or otherwise uses more than one member of a chemical category listed in § 372.65(c), the owner or operator of the facility must report if it exceeds any applicable threshold for the total volume of all the members of the category involved in the applicable activity. Any such report must cover all activities at the facility involving members of the category.

(e) A facility may process or otherwise use a toxic chemical in a recycle/reuse operation. To determine whether the facility has processed or used more than an applicable threshold of the chemical, the owner or operator of the facility shall count the amount of the chemical added to the recycle/reuse operation during the calendar year. In particular, if the facility starts up such an operation during a calendar year, or in the event that the contents of the whole recycle/reuse operation are replaced in a calendar year, the owner or operator of the facility shall also count the amount of the chemical placed into the system at these times.

(f) A toxic chemical may be listed in § 372.65 with the notation that only persons who manufacture the chemical, or manufacture it by a certain method, are required to report. In that case, only owners or operators of facilities that manufacture that chemical as described in § 372.65 in excess of the threshold applicable to such manufacture in § 372.25 are required to report. In completing the reporting form, the owner or operator is only required to account for the quantity of the chemical so manufactured and releases associated with such manufacturing, but not releases associated with subsequent processing or use of the chemical at that facility. Owners and operators of facilities that solely process or use such a chemical are not required to report for that chemical.

(g) A toxic chemical may be listed in § 372.65 with the notation that it is in a specific form (e.g., fume or dust, solution, or friable) or of a specific color (e.g., yellow or white). In that case, only owners or operators of facilities that manufacture, process, or use that chemical in the form or of the color, specified in § 372.65 in excess of the threshold applicable to such activity in § 372.25 are required to report. In completing the reporting form, the owner or operator is only required to account for the quantity of the chemical manufactured, processed, or used in the form or color specified in § 372.65 and for releases associated with the chemical in that form or color. Owners or operators of facilities that solely manufacture, process, or use such a chemical in a form or color other than those specified by § 372.65 are not required to report for that chemical.

(h) Metal compound categories are listed in § 372.65(c). For purposes of determining whether any of the thresholds specified in § 372.25 are met for metal compound category, the owner or operator of a facility must make the threshold determination based on the total amount of all members of the metal compound category manufactured, processed, or used at the facility. In completing the release portion of the reporting form for releases of the metal compounds, the owner or operator is only required to account for the weight of the parent metal released. Any contribution to the mass of the release attributable to other portions of each compound in the category is excluded.

§ 372.30 Reporting requirements and schedule for reporting.

(a) For each toxic chemical known by the owner or operator to be manufactured (including imported), processed, or otherwise used in excess of an applicable threshold quantity in

§ 372.25 at its covered facility described in § 372.22 for a calendar year, the owner or operator must submit to EPA and to the State in which the facility is located a completed EPA Form R (EPA Form 9350-1) in accordance with the instructions in Subpart E.

(b)(1) The owner or operator of a covered facility is required to report as described in paragraph (a) of this section on a toxic chemical that the owner or operator knows is present as a component of a mixture or trade name product which the owner or operator receives from another person, if that chemical is imported, processed, or otherwise used by the owner or operator in excess of an applicable threshold quantity in § 372.25 at the facility as part of that mixture or trade name product.

(2) The owner or operator knows that a toxic chemical is present as a component of a mixture or trade name product (i) if the owner or operator knows or has been told the chemical identity or Chemical Abstracts Service Registry Number of the chemical and the identity or Number corresponds to an identity or Number in § 372.65, or (ii) if the owner or operator has been told by the supplier of the mixture or trade name product that the mixture or trade name product contains a toxic chemical subject to section 313 of the Act or this part.

(3) To determine whether a toxic chemical which is a component of a mixture or trade name product has been imported, processed, or otherwise used in excess of an applicable threshold in § 372.25 at the facility, the owner or operator shall consider only the portion of the mixture or trade name product that consists of the toxic chemical and that is imported, processed, or otherwise used at the facility, together with any other amounts of the same toxic chemical that the owner or operator manufactures, imports, processes, or otherwise uses at the facility as follows:

(i) If the owner or operator knows the specific chemical identity of the toxic chemical and the specific concentration at which it is present in the mixture or trade name product, the owner or operator shall determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade name product at the facility and shall combine that with the weight of the toxic chemical manufactured (including imported) processed, or otherwise used at the facility other than as part of the mixture or trade name product. After combining these amounts, if the owner or operator determines that the toxic chemical was manufactured, processed, or otherwise used in excess of an applicable threshold in § 372.25, the owner or operator shall report the specific chemical identity and all releases of the toxic chemical on EPA Form R in accordance with the instructions in Subpart E.

(ii) If the owner or operator knows the specific chemical identity of the toxic chemical and does not know the specific concentration at which the chemical is present in the mixture or trade name product, but has been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall determine whether the chemical has been manufactured, processed, or otherwise used at the facility in excess of an applicable threshold as provided in paragraph (b)(3)(i) of this section, and shall report as provided in paragraph (b)(3)(i) of this section.

(iii) If the owner or operator knows the specific chemical identity of the toxic chemical, does not know the specific concentration at which the chemical is present in the mixture or trade name product, has not been told the upper bound concentration of the chemical in the mixture or trade name product, and has not otherwise developed information on the composition of the chemical in the mixture or trade name product, then the owner or operator is not required to factor that chemical in that mixture or trade name product into threshold and release calculations for that chemical.

(iv) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical and knows the specific concentration at which it is present in the mixture or trade name product, the owner or operator shall determine the weight of the chemical imported, processed, or otherwise used as part of the mixture or trade name product at the facility. Since the owner or operator does not know the specific identity of the toxic chemical, the owner or operator shall make the threshold determination only for the weight of the toxic chemical in the mixture or trade name product. If the owner or operator determines that the toxic chemical was imported, processed, or otherwise used as part of the mixture or trade name product in excess of an applicable threshold in § 372.25, the owner or operator shall report the generic chemical name of the toxic chemical, or a trade name if the generic chemical name is not known, and all releases of the toxic chemical on EPA Form R in accordance with the instructions in Subpart E.

(v) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical, and does not know the specific concentration at which the chemical is present in the mixture or trade name product, but has been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator shall assume that the toxic chemical is present in the mixture or trade name product at the upper bound concentration, shall determine whether the chemical has been imported, processed, or otherwise used at the facility in excess of an applicable threshold as provided in paragraph (b)(3)(iv) of this section, and shall report as provided in paragraph (b)(3)(iv) of this section.

(vi) If the owner or operator has been told that a mixture or trade name product contains a toxic chemical, does not know the specific chemical identity of the chemical, does not know the specific concentration at which the chemical is present in the mixture or trade name product, including information they have themselves developed, and has not been told the upper bound concentration of the chemical in the mixture or trade name product, the owner or operator is not required to report with respect to that toxic chemical.

(c) A covered facility may consist of more than one establishment. The owner or operator of such a facility at which a toxic chemical was manufactured (including imported), processed, or otherwise used in excess of an applicable threshold may submit a separate Form R for each establishment or for each group of establishments within the facility to report the activities involving the toxic chemical at each establishment or group of establishments, provided that activities involving that toxic chemical at all the establishments within the covered facility are reported. If each establishment or group of establishments files separate reports then for all other chemicals subject to reporting at that facility they must also submit separate reports. However, an establishment or group of establishments does not have to submit a report for a chemical that is not manufactured (including imported), processed, otherwise used, or released at that establishment or group of establishments.

(d) Each report under this section for activities involving a toxic chemical that occurred during a calendar year at a covered facility must be submitted on or before July 1 of the next year. The first such report for calendar year 1987 activities must be submitted on or before July 1, 1988.

(e) For reports applicable to activities for calendar years 1987, 1988, and 1989 only, the owner or operator of a covered facility may report releases of a specific toxic chemical to an environmental medium, or transfers of wastes containing a specific toxic chemical to an off-site location, of less than 1,000 pounds using the ranges provided in the form and instructions in Subpart E. For reports applicable to activities in calendar year 1990 and beyond, these ranges may not be used.

[53 FR 4525, Feb. 16, 1988; 53 FR 12748, Apr. 18, 1988]

§ 372.38 Exemptions.

(a) *De minimis concentrations of a toxic chemical in a mixture.* If a toxic chemical is present in a mixture of chemicals at a covered facility and the toxic chemical is in a concentration in the mixture which is below 1 percent of the mixture, or 0.1 percent of the mixture in the case of a toxic chemical which is a carcinogen as defined in 29 CFR 1910.1200(d)(4), a person is not required to consider the quantity of the toxic chemical present in such mixture when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the mixture from another person or the person produced the mixture, either by mixing the chemicals involved or by causing a chemical reaction which resulted in the creation of the toxic chemical in the mixture. However, this exemption applies only to the quantity of the toxic chemical present in the mixture. If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the mixture or in a mixture at higher concentrations, in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30.

(b) *Articles.* If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article. If the toxic chemical is manufactured (including imported), processed, or otherwise used at the covered facility other than as part of the article, in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30. Persons potentially subject to this exemption should carefully review the definitions of "article" and "release" in § 372.3. If a release of a toxic chemical occurs as a result of the processing or use of an item at the facility, that item does not meet the definition of "article."

(c) *Uses.* If a toxic chemical is used at a covered facility for a purpose described in this paragraph (c), a person is not required to consider the quantity of the toxic chemical used for such purpose when determining whether an applicable threshold has been met under § 372.25 or determining the amount of releases to be reported under § 372.30. However, this exemption only applies to the quantity of the toxic chemical used for the purpose described in this paragraph (c). If the toxic chemical is also manufactured (including imported), processed, or otherwise used at the covered facility other than as described in this paragraph (c), in excess of an applicable threshold quantity set forth in § 372.25, the person is required to report under § 372.30.

(1) Use as a structural component of the facility.

(2) Use of products for routine janitorial or facility grounds maintenance. Examples include use of janitorial cleaning supplies, fertilizers, and pesticides similar in type or concentration to consumer products.

(3) Personal use by employees or other persons at the facility of foods, drugs, cosmetics, or other personal items containing toxic chemicals, including supplies of such products within the facility such as in a facility operated cafeteria, store, or infirmary.

(4) Use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility.

(5) Use of toxic chemicals present in process water and non-contact cooling water as drawn from the environment or from municipal sources, or toxic chemicals present in air used either as compressed air or as part of combustion.

(d) *Activities in laboratories.* If a toxic chemical is manufactured, processed, or used in a laboratory at a covered facility under the supervision of a technically qualified individual as defined in § 720.3(ee) of this title, a person is not required to consider the quantity so manufactured, processed, or used when determining whether an applicable threshold has been met under § 372.25 or determining the amount of release to be reported under § 372.30. This exemption does not apply in the following cases:

(1) Specialty chemical production.

(2) Manufacture, processing, or use of toxic chemicals in pilot plant scale operations.

(3) Activities conducted outside the laboratory.

(e) *Certain owners of leased property.* The owner of a covered facility is not subject to reporting under § 372.30 if such owner's only interest in the facility is ownership of the real estate upon which the facility is operated. This exemption applies to owners of facilities such as industrial parks, all or part of which are leased to persons who operate establishments within SIC code 20 through 39 where the owner has no other business interest in the operation of the covered facility.

(f) *Reporting by certain operators of establishments on leased property such as industrial parks.* If two or more persons, who do not have any common corporate or business interest (including common ownership or control), operate separate establishments within a single facility, each such person shall treat the establishments it operates as a facility for purposes of this part. The determinations in § 372.22 and § 372.25 shall be made for those establishments. If any such operator determines that its establishment is a covered facility under § 372.22 and that a toxic chemical has been manufactured (including imported), processed, or otherwise used at the establishment in excess of an applicable threshold in § 372.25 for a calendar year, the operator shall submit a report in accordance with § 372.30 for the establishment. For purposes of this paragraph (f), a common corporate or business interest includes ownership, partnership, joint ventures, ownership of a controlling interest in one person by the other, or ownership of a controlling interest in both persons by a third person.

Subpart C—Supplier Notification Requirement

§ 372.45 Notification about toxic chemicals.

(a) Except as provided in paragraphs (c), (d), and (e) of this section and § 372.65, a person who owns or operates a facility or establishment which:

(1) Is in Standard Industrial Classification codes 20 through 39 as set forth in paragraph (b) of § 372.22,

(2) Manufactures (including imports) or processes a toxic chemical, and

(3) Sells or otherwise distributes a mixture or trade name product containing the toxic chemical, to (i) a facility described in § 372.22, or (ii) to a person who in turn may sell or otherwise distributes such mixture or trade name product to a facility described in § 372.22(b), must notify each person to whom the mixture or trade name product is sold or otherwise distributed from the facility or establishment in accordance with paragraph (b) of this section.

(b) The notification required in paragraph (a) of this section shall be in writing and shall include:

(1) A statement that the mixture or trade name product contains a toxic chemical or chemicals subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

(2) The name of each toxic chemical, and the associated Chemical Abstracts Service registry number of each chemical if applicable, as set forth in § 372.65.

(3) The percent by weight of each toxic chemical in the mixture or trade name product.

(c) Notification under this section shall be provided as follows:

(1) For a mixture or trade name product containing a toxic chemical listed in § 373.65 with an effective date of January 1, 1987, the person shall provide the written notice described in paragraph (b) of this section to each recipient of the mixture or trade name product with at least the first shipment of each mixture or trade name

product to each recipient in each calendar year beginning January 1, 1989.

(2) For a mixture or trade name product containing a toxic chemical listed in § 372.65 with an effective date of January 1, 1989 or later, the person shall provide the written notice described in paragraph (b) of this section to each recipient of the mixture or trade name product with at least the first shipment of the mixture or trade name product to each recipient in each calendar year beginning with the applicable effective date.

(3) If a person changes a mixture or trade name product for which notification was previously provided under paragraph (b) of this section by adding a toxic chemical, removing a toxic chemical, or changing the percent by weight of a toxic chemical in the mixture or trade name product, the person shall provide each recipient of the changed mixture or trade name product a revised notification reflecting the change with the first shipment of the changed mixture or trade name product to the recipient.

(4) If a person discovers (i) that a mixture or trade name product previously sold or otherwise distributed to another person during the calendar year of the discovery contains one or more toxic chemicals and (ii), that any notification providied to such other persons in that calendar year for the mixture or trade name product either did not properly identify any of the toxic chemicals or did not accurately present the percent by weight of any of the toxic chemicals in the mixture or trade name product, the person shall provide a new notification to the recipient within 30 days of the discovery which contains the information described in paragraph (b) of this section and identifies the prior shipments of the mixture or product in that calendar year to which the new notification applies.

(5) If a Material Safety Data Sheet (MSDS) is required to be prepared and distributed for the mixture or trade name product in accordance with 29 CFR 1910.1200, the notification must be attached to or otherwise incorporated into such MSDS. When the notification is attached to the MSDS, the notice must contain clear instructions that the notifications must not be detached from the MSDS and that any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

(d) Notifications are not required in the following instances:

(1) If a mixture or trade name product contains no toxic chemical in excess of the applicable de minimis concentration as specified in § 372.38(a).

(2) If a mixture or trade name product is one of the following:

(i) An "article" as defined in § 372.3

(ii) Foods, drugs, cosmetics, alcoholic beverages, tobacco, or tobacco products packaged for distribution to the general public.

(iii) Any consumer product as the term is defined in the Consumer Product Safety Act (15 U.S.C. 1251 *et seq.*) packaged for distribution to the general public.

(e) If the person considers the specific identity of a toxic chemical in a mixture or trade name product to be a trade secret under provisions of 29 CFR 1910.1200, the notice shall contain a generic chemical name that is descriptive of that toxic chemical.

(f) If the person considers the specific percent by weight composition of a toxic chemical in the mixture or trade name product to be a trade secret under applicable State law or under the Restatement of Torts section 757, comment b, the notice must contain a statement that the chemical is present at a concentration that does not exceed a specified upper bound concentration value. For example, a mixture contains 12 percent of a toxic chemical. However, the supplier considers the specific concentration of the toxic chemical in the product to be a trade secret. The notice would indicate that the toxic chemical is present in the mixture in a concentration of no more than 15 percent by weight. The upper bound value chosen must be no larger than necessary to adequately protect the trade secret.

(g) A person is not subject to the requirements of this section to the extent the person does not know that the facility or establishment(s) is sell-ing or otherwise distributing a toxic chemical to another person in a mixture or trade name product. However, for purposes of this section, a person has such knowledge if the person receives a notice under this section from a supplier of a mixture or trade name product and the person in turn sells or otherwise distributes that mixture or trade name product to another person.

(h) If two or more persons, who do not have any common corporate or business interest (including common ownership or control), as described in § 372.38(f), operate separate establishments within a single facility, each such persons shall treat the establishment(s) it operates as a facility for purposes of this section. The determination under paragraph (a) of this section shall be made for those establishments.

[53 FR 4525, Feb. 16, 1988; 53 FR 12748, Apr. 18, 1988]

Subpart D—Specific Toxic Chemical Listings

§ 372.65 Chemicals and chemical categories to which this part applies.

The requirements of this part apply to the following chemicals and chemical categories. This section contains three listings. Paragraph (a) of this section is an alphabetical order listing of those chemicals that have an associated Chemical Abstracts Service (CAS) Registry number. Paragraph (b) of this section contains a CAS number order list of the same chemicals listed in paragraph (a) of this section. Paragraph (c) of this section contains the chemical categories for which reporting is required. These chemical categories are listed in alphabetical order and do not have CAS numbers. Each listing identifies the effective date for reporting under § 372.30.

(a) *Alphabetical listing.*

Chemical name	CAS No.	Effective date
Acetaldehyde	75-07-0	01/01/87
Acetamide	60-35-5	01/01/87
Acetone	67-64-1	01/01/87
Acetonitrile	75-05-8	01/01/87
2-Acetylaminofluorene	53-96-3	01/01/87
Acrolein	107-02-8	01/01/87
Acrylamide	79-06-1	01/01/87
Acrylic acid	79-10-7	01/01/87
Acrylonitrile	107-13-1	01/01/87
Aldrin[1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha.,8.alpha.,8a.beta.)-]	309-00-2	01/01/87
Allyl chloride	107-05-1	01/01/87
Aluminum (fume or dust)	7429-90-5	01/01/87
Aluminum oxide	1344-28-1	01/01/87
2-Aminoanthraquinone	117-79-3	01/01/87
4-Aminoazobenzene	60-09-3	01/01/87
4-Aminobiphenyl	92-67-1	01/01/87
1-Amino-2-methylanthraquinone	82-28-0	01/01/87
Ammonia	7664-41-7	01/01/87
Ammonium nitrate (solution)	6484-52-2	01/01/87
Ammonium sulfate (solution)	7783-20-2	01/01/87
Aniline	62-53-3	01/01/87
o-Anisidine	90-04-0	01/01/87
p-Anisidine	104-94-9	01/01/87
o-Anisidine hydrochloride	134-29-2	01/01/87
Anthracene	120-12-7	01/01/87
Antimony	7440-36-0	01/01/87
Arsenic	7440-38-2	01/01/87
Asbestos (friable)	1332-21-4	01/01/87
Barium	7440-39-3	01/01/87
Benzal chloride	98-87-3	01/01/87
Benzamide	55-21-0	01/01/87
Benzene	71-43-2	01/01/87
Benzidine	92-87-5	01/01/87
Benzoic trichloride (Benzotrichloride)	98-07-7	01/01/87
Benzoyl chloride	98-88-4	01/01/87
Benzoyl peroxide	94-36-0	01/01/87
Benzyl chloride	100-44-7	01/01/87
Beryllium	7440-41-7	01/01/87

Chemical name	CAS No.	Effective date
Biphenyl	92-52-4	01/01/87
Bis(2-chloroethyl) ether	111-44-4	01/01/87
Bis(chloromethyl) ether	542-88-1	01/01/87
Bis(2-chloro-1-methylethyl) ether	108-60-1	01/01/87
Bis(2-ethylhexyl) adipate	103-23-1	01/01/87
Bromoform (Tribromomethane)	75-25-2	01/01/87
Bromomethane (Methyl bromide)	74-83-9	01/01/87
1,3-Butadiene	106-99-0	01/01/87
Butyl acrylate	141-32-2	01/01/87
n-Butyl alcohol	71-36-3	01/01/87
sec-Butyl alcohol	78-92-2	01/01/87
tert-Butyl alcohol	75-65-0	01/01/87
Butyl benzyl phthalate	85-68-7	01/01/87
1,2-Butylene oxide	106-88-7	01/01/87
Butyraldehyde	123-72-8	01/01/87
C.I. Acid Green 3	4680-78-8	01/01/87
C.I. Basic Green 4	569-64-2	01/01/87
C.I. Basic Red 1	989-38-8	01/01/87
C.I. Direct Black 38	1937-37-7	01/01/87
C.I. Direct Blue 6	2602-46-2	01/01/87
C.I. Direct Brown 95	16071-86-6	01/01/87
C.I. Disperse Yellow 3	2832-40-8	01/01/87
C.I. Food Red 5	3761-53-3	01/01/87
C.I. Food Red 15	81-88-9	01/01/87
C.I. Solvent Orange 7	3118-97-6	01/01/87
C.I. Solvent Yellow 3	97-56-3	01/01/87
C.I. Solvent Yellow 14	842-07-9	01/01/87
C.I. Solvent Yellow 34 (Aurimine)	492-80-8	01/01/87
C.I. Vat Yellow 4	128-66-5	01/01/87
Cadmium	7440-43-9	01/01/87
Calcium cyanamide	156-62-7	01/01/87
Captan[1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]	133-06-2	01/01/87
Carbaryl [1-Naphthalenol, methylcarbamate]	63-25-2	01/01/87
Carbon disulfide	75-15-0	01/01/87
Carbon tetrachloride	56-23-5	01/01/87
Carbonyl sulfide	463-58-1	01/01/87
Catechol	120-80-9	01/01/87
Chloramben [Benzoic acid,3-amino-2,5-dichloro-]	133-90-4	01/01/87
Chlordane [4,7-Methanoindan,1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	57-74-9	01/01/87
Chlorine	7782-50-5	01/01/87
Chlorine dioxide	10049-04-4	01/01/87
Chloroacetic acid	79-11-8	01/01/87
2-Chloroacetophenone	532-27-4	01/01/87
Chlorobenzene	108-90-7	01/01/87
Chlorobenzilate [Benzeneacetic acid, 4-chloro-.alpha.-(4-.chlorophenyl)-.alpha.-hydroxy-, ethyl ester]	510-15-6	01/01/87
Chloroethane (Ethyl chloride)	75-00-3	01/01/87
Chloroform	67-66-3	01/01/87
Chloromethane (Methyl chloride)	74-87-3	01/01/87
Chloromethyl methyl ether	107-30-2	01/01/87
Chloroprene	126-99-8	01/01/87
Chlorothalonil [1,3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	1897-45-6	01/01/87
Chromium	7440-47-3	01/01/87
Cobalt	7440-48-4	01/01/87
Copper	7440-50-8	01/01/87
p-Cresidine	120-71-8	01/01/87
Cresol (mixed isomers)	1319-77-3	01/01/87
m-Cresol	108-39-4	01/01/87
o-Cresol	95-48-7	01/01/87
p-Cresol	106-44-5	01/01/87
Cumene	98-82-8	01/01/87
Cumene hydroperoxide	80-15-9	01/01/87
Cupferron[Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	135-20-6	01/01/87
Cyclohexane	110-82-7	01/01/87
2,4-D [Acetic acid, (2,4-dichlorophenoxy)-]	94-75-7	01/01/87
Decabromodiphenyl oxide	1163-19-5	01/01/87
Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester]	2303-16-4	01/01/87
2,4-Diaminoanisole	615-05-4	01/01/87
2,4-Diaminoanisole sulfate	39156-41-7	01/01/87
4,4'-Diaminodiphenyl ether	101-80-4	01/01/87
Diaminotoluene (mixed isomers)	25376-45-8	01/01/87
2,4-Diaminotoluene	95-80-7	01/01/87
Diazomethane	334-88-3	01/01/87

Chemical name	CAS No.	Effective date
Dibenzofuran	132-64-9	01/01/87
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	01/01/87
1,2-Dibromoethane (Ethylene dibromide)	106-93-4	01/01/87
Dibutyl phthalate	84-74-2	01/01/87
Dichlorobenzene (mixed isomers)	25321-22-6	01/01/87
1,2-Dichlorobenzene	95-50-1	01/01/87
1,3-Dichlorobenzene	541-73-1	01/01/87
1,4-Dichlorobenzene	106-46-7	01/01/87
3,3'-Dichlorobenzidine	91-94-1	01/01/87
Dichlorobromomethane	75-27-4	01/01/87
1,2-Dichloroethane (Ethylene dichloride)	107-06-2	01/01/87
1,2-Dichlorethylene	540-59-0	01/01/87
Dichloromethane (Methylene chloride)	75-09-2	01/01/87
2,4-Dichlorophenol	120-83-2	01/01/87
1,2-Dichloropropane	78-87-5	01/01/87
1,3-Dichloropropylene	542-75-6	01/01/87
Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	62-73-7	01/01/87
Dicofol [Benzenemethanol,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]	115-32-2	01/01/87
Diepoxybutane	1464-53-5	01/01/87
Diethanolamine	111-42-2	01/01/87
Di-(2-ethylhexyl) phthalate (DEHP)	177-81-7	01/01/87
Diethyl phthalate	84-66-2	01/01/87
Diethyl sulfate	64-67-5	01/01/87
3,3'-Dimethoxybenzidine	119-90-4	01/01/87
4-Dimethylaminoazobenzene	60-11-7	01/01/87
3,3'-Dimethylbenzidine (*o*-Tolidine)	119-93-7	01/01/87
Dimethylcarbamyl chloride	79-44-7	01/01/87
1,1-Dimethyl hydrazine	57-14-7	01/01/87
2,4-Dimethylphenol	105-67-9	01/01/87
Dimethyl phthalate	131-11-3	01/01/87
Dimethyl sulfate	77-78-1	01/01/87
4,6-Dinitro-*o*-cresol	534-52-1	01/01/87
2,4-Dinitrophenol	51-28-5	01/01/87
2,4-Dinitrotoluene	121-14-2	01/01/87
2,6-Dinitrotoluene	606-20-2	01/01/87
n-Dioctyl phthalate	117-84-0	01/01/87
1,4-Dioxane	123-91-1	01/01/87
1,2-Diphenylhydrazine (Hydrazobenzene)	122-66-7	01/01/87
Epichlorohydrin	106-89-8	01/01/87
2-Ethoxyethanol	110-80-5	01/01/87
Ethyl acrylate	140-88-5	01/01/87
Ethylbenzene	100-41-4	01/01/87
Ethyl chloroformate	541-41-3	01/01/87
Ethylene	74-85-1	01/01/87
Ethylene glycol	107-21-1	01/01/87
Ethyleneimine(Aziridine)	151-56-4	01/01/87
Ethylene oxide	75-21-8	01/01/87
Ethylene thiourea	96-45-7	01/01/87
Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	2164-17-2	01/01/87
Formaldehyde	50-00-0	01/01/87
Freon 113 [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]	76-13-1	01/01/87
Heptachlor[1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]	76-44-8	01/01/87
Hexachlorobenzene	118-74-1	01/01/87
Hexachloro-1,3-butadiene	87-68-3	01/01/87
Hexachlorocyclopentadiene	77-47-4	01/01/87
Hexachloroethane	67-72-1	01/01/87
Hexachloronaphthalene	1335-87-1	01/01/87
Hexamethylphosphoramide	680-31-9	01/01/87
Hydrazine	302-01-2	01/01/87
Hydrazine sulfate	10034-93-2	01/01/87
Hydrochloric acid	7647-01-0	01/01/87
Hydrogen cyanide	74-90-8	01/01/87
Hydrogen fluoride	7664-39-3	01/01/87
Hydroquinone	123-31-9	01/01/87
Isobutyraldehyde	78-84-2	01/01/87
Isopropyl alcohol (Only persons who manufacture by the strong acid process are subject, no supplier notifiction.)	67-63-0	01/01/87
4,4'-Isopropylidenediphenol	80-05-7	01/01/87
Lead	7439-92-1	01/01/87
Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]	58-89-9	01/01/87
Maleic anhydride	108-31-6	01/01/87
Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	12427-38-2	01/01/87

Chemical name	CAS No.	Effective date
Manganese	7439-96-5	01/01/87
Mercury	7439-97-6	01/01/87
Methanol	67-56-1	01/01/87
Methoxychlor [Benzene, 1,1′-(2,2,2-trichloroethylidene)bis[4-methoxy-]	72-43-5	01/01/87
2-Methoxyethanol	109-86-4	01/01/87
Methyl acrylate	96-33-3	01/01/87
Methyl *tert*-butyl ether	1634-04-4	01/01/87
4,4′-Methylenebis(2-chloroaniline) (MBOCA)	101-14-4	01/01/87
4,4′-Methylenebis(*N,N*-dimethyl) benzenamine	101-61-1	01/01/87
Methylenebis(phenylisocyanate) (MBI)	101-68-8	01/01/87
Methylene bromide	74-95-3	01/01/87
4,4′-Methylenedianiline	101-77-9	01/01/87
Methyl ethyl ketone	78-93-3	01/01/87
Methyl hydrazine	60-34-4	01/01/87
Methyl iodide	74-88-4	01/01/87
Methyl isobutyl ketone	108-10-1	01/01/87
Methyl isocyanate	624-83-9	01/01/87
Methyl methacrylate	80-62-6	01/01/87
Michler's ketone	90-94-8	01/01/87
Molybdenum trioxide	1313-27-5	01/01/87
Mustard gas [Ethane, 1,1′-thiobis[2-chloro-]	505-60-2	01/01/87
Naphthalene	91-20-3	01/01/87
alpha-Naphthylamine	134-32-7	01/01/87
beta-Naphthylamine	91-59-8	01/01/87
Nickel	7440-02-0	01/01/87
Nitric acid	7697-37-2	01/01/87
Nitrilotriacetic acid	139-13-9	01/01/87
5-Nitro-*o*-anisidine	99-59-2	01/01/87
Nitrobenzene	98-95-3	01/01/87
4-Nitrobiphenyl	92-93-3	01/01/87
Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	1836-75-5	01/01/87
Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	51-75-2	01/01/87
Nitroglycerin	55-63-0	01/01/87
2-Nitrophenol	88-75-5	01/01/87
4-Nitrophenol	100-02-7	01/01/87
2-Nitropropane	79-46-9	01/01/87
p-Nitrosodiphenylamine	156-10-5	01/01/87
N,N-Dimethylaniline	121-69-7	01/01/87
N-Nitrosodi-*n*-butylamine	924-16-3	01/01/87
N-Nitrosodiethylamine	55-18-5	01/01/87
N-Nitrosodimethylamine	62-75-9	01/01/87
N-Nitrosodiphenylamine	86-30-6	01/01/87
N-Nitrosodi-*n*-propylamine	621-64-7	01/01/87
N-Nitrosomethylvinylamine	4549-40-0	01/01/87
N-Nitrosomorpholine	59-89-2	01/01/87
N-Nitroso-*N*-ethylurea	759-73-9	01/01/87
N-Nitroso-*N*-methylurea	684-93-5	01/01/87
N-Nitrosonornicotine	16543-55-8	01/01/87
N-Nitrosopiperidine	100-75-4	01/01/87
Octachloronaphthalene	2234-13-1	01/01/87
Osmium tetroxide	20816-12-0	01/01/87
Parathion [Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester]	56-38-2	01/01/87
Pentachlorophenol (PCP)	87-86-5	01/01/87
Peracetic acid	79-21-0	01/01/87
Phenol	108-95-2	01/01/87
p-Phenylenediamine	106-50-3	01/01/87
2-Phenylphenol	90-43-7	01/01/87
Phosgene	75-44-5	01/01/87
Phosphoric acid	7664-38-2	01/01/87
Phosphorus (yellow or white)	7723-14-0	01/01/87
Phthalic anhydride	85-44-9	01/01/87
Picric acid	88-89-1	01/01/87
Polychlorinated biphenyls (PCBs)	1336-36-3	01/01/87
Propane sultone	1120-71-4	01/01/87
beta-Propiolactone	57-57-8	01/01/87
Propionaldehyde	123-38-6	01/01/87
Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]	114-26-1	01/01/87
Propylene (Propene)	115-07-1	01/01/87
Propyleneimine	75-55-8	01/01/87
Propylene oxide	75-56-9	01/01/87
Pyridine	110-86-1	01/01/87
Quinoline	91-22-5	01/01/87
Quinone	106-51-4	01/01/87

Chemical name	CAS No.	Effective date
Quintozene [Pentachloronitrobenzene]	82-68-8	01/01/87
Saccharin (only persons who manufacture are subject, no supplier notification) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	81-07-2	01/01/87
Safrole	94-59-7	01/01/87
Selenium	7782-49-2	01/01/87
Silver	7440-22-4	01/01/87
Sodium hydroxide (solution)	1310-73-2	01/01/87
Styrene	100-42-5	01/01/87
Styrene oxide	96-09-3	01/01/87
Sulfuric acid	7664-93-9	01/01/87
Terephthalic acid	100-21-0	01/01/87
1,1,2,2-Tetrachloroethane	79-34-5	01/01/87
Tetrachloroethylene (Perchloroethylene)	127-18-4	01/01/87
Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	961-11-5	01/01/87
Thallium	7440-28-0	01/01/87
Thioacetamide	62-55-5	01/01/87
4,4′-Thiodianiline	139-65-1	01/01/87
Thiourea	62-56-6	01/01/87
Thorium dioxide	1314-20-1	01/01/87
Titanium tetrachloride	7550-45-0	01/01/87
Toluene	108-88-3	01/01/87
Toluene-2,4-diisocyanate	584-84-9	01/01/87
Toluene-2,6-diisocyanate	91-08-7	01/01/87
o-Toluidine	95-53-4	01/01/87
o-Toluidine hydrochloride	636-21-5	01/01/87
Toxaphene	8001-35-2	01/01/87
Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	68-76-8	01/01/87
Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester]	52-68-6	01/01/87
1,2,4-Trichlorobenzene	120-82-1	01/01/87
1,1,1-Trichloroethane (Methyl chloroform)	71-55-6	01/01/87
1,1,2-Trichloroethane	79-00-5	01/01/87
Trichloroethylene	79-01-6	01/01/87
2,4,5-Trichlorophenol	95-95-4	01/01/87
2,4,6-Trichlorophenol	88-06-2	01/01/87
Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-1]	1582-09-8	01/01/87
1,2,4-Trimethylbenzene	95-63-6	01/01/87
Tris(2,3-dibromopropyl) phosphate	126-72-7	01/01/87
Urethane (Ethyl carbamate)	51-79-6	01/01/87
Vanadium (fume or dust)	7440-62-2	01/01/87
Vinyl acetate	108-05-4	01/01/87
Vinyl bromide	593-60-2	01/01/87
Vinyl chloride	75-01-4	01/01/87
Vinylidene chloride	75-35-4	01/01/87
Xylene (mixed isomers)	1330-20-7	01/01/87
m-Xylene	108-38-3	01/01/87
o-Xylene	95-47-6	01/01/87
p-Xylene	106-42-3	01/01/87
2,6-Xylidine	87-62-7	01/01/87
Zinc (fume or dust)	7440-66-6	01/01/87
Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]	12122-67-7	01/01/87

(b) *CAS Number listing.*

CAS No.	Chemical name	Effective date
50-00-0	Formaldehyde	01/01/87
51-28-5	2,4-Dinitrophenol	01/01/87
51-75-2	Nitrogen mustard [2-Chloro-N-(2-chloroethyl)-N-methylethanamine]	01/01/87
51-79-6	Urethane (Ethyl carbamate)	01/01/87
52-68-6	Trichlorfon [Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-dimethyl ester]	01/01/87
53-96-3	2-Acetylaminofluorene	01/01/87
55-18-5	*N*-Nitrosodiethylamine	01/01/87
55-21-0	Benzamide	01/01/87
55-63-0	Nitroglycerin	01/01/87
56-23-5	Carbon tetrachloride	01/01/87
56-38-2	Parathion [Phosphorothioic acid, 0,0-diethyl-0-(4-nitrophenyl)ester]	01/01/87
57-14-7	1,1-Dimethyl hydrazine	01/01/87
57-57-8	*beta*-Propiolactone	01/01/87

CAS No.	Chemical name	Effective date
57-74-9	Chlordane [4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-]	01/01/87
58-89-9	Lindane [Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-]	01/01/87
59-89-2	*N*-Nitrosomorpholine	01/01/87
60-09-3	4-Aminoazobenzene	01/01/87
60-11-7	4-Dimethylaminoazobenzene	01/01/87
60-34-4	Methyl hydrazine	01/01/87
60-35-5	Acetamide	01/01/87
62-53-3	Aniline	01/01/87
62-55-5	Thioacetamide	01/01/87
62-56-6	Thiourea	01/01/87
62-73-7	Dichlorvos [Phosphoric acid, 2,2-dichloroethenyl dimethyl ester]	01/01/87
62-75-9	*N*-Nitrosodimethylamine	01/01/87
63-25-2	Carbaryl [1-Naphthalenol, methylcarbamate]	01/01/87
64-67-5	Diethyl sulfate	01/01/87
67-56-1	Methanol	01/01/87
67-63-0	Isopropyl alcohol (only persons who manufacture by the strong acid process are subject, supplier notification not required.)	01/01/87
67-64-1	Acetone	01/01/87
67-66-3	Chloroform	01/01/87
67-72-1	Hexachloroethane	01/01/87
68-76-8	Triaziquone [2,5-Cyclohexadiene-1,4-dione,2,3,5-tris(1-aziridinyl)-]	01/01/87
71-36-3	*n*-Butyl alcohol	01/01/87
71-43-2	Benzene	01/01/87
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	01/01/87
72-43-5	Methoxychlor [Benzene, 1,1′-(2,2,2,-trichloroethylidene)bis [4-methoxy-]	01/01/87
74-83-9	Bromomethane (Methyl bromide)	01/01/87
74-85-1	Ethylene	01/01/87
74-87-3	Chloromethane (Methyl chloride)	01/01/87
74-88-4	Methyl iodide	01/01/87
74-90-8	Hydrogen cyanide	01/01/87
74-95-3	Methylene bromide	01/01/87
75-00-3	Chloroethane (Ethyl chloride)	01/01/87
75-01-4	Vinyl chloride	01/01/87
75-05-8	Acetonitrile	01/01/87
75-07-0	Acetaldehyde	01/01/87
75-09-2	Dichloromethane (Methylene chloride)	01/01/87
75-15-0	Carbon disulfide	01/01/87
75-21-8	Ethylene oxide	01/01/87
75-25-2	Bromoform (Tribromomethane)	01/01/87
75-27-4	Dichlorobromomethane	01/01/87
75-35-4	Vinylidene chloride	01/01/87
75-44-5	Phosgene	01/01/87
75-55-8	Propyleneimine	01/01/87
75-56-9	Propylene oxide	01/01/87
75-65-0	*tert*-Butyl alcohol	01/01/87
77-13-1	Freon 113 [Ethane, 1,1,2-trichloro-1,2,2-trifluoro-]	01/01/87
76-44-8	Heptachlor [1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene]	01/01/87
77-47-4	Hexachlorocyclopentadiene	01/01/87
77-78-1	Dimethyl sulfate	01/01/87
78-84-2	Isobutyraldehyde	01/01/87
78-87-5	1,2-Dichloropropane	01/01/87
78-92-2	*sec*-Butyl alcohol	01/01/87
78-93-3	Methyl ethyl ketone	01/01/87
79-00-5	1,1,2-Trichloroethane	01/01/87
79-01-6	Trichloroethylene	01/01/87
79-06-1	Acrylamide	01/01/87
79-10-7	Acrylic acid	01/01/87
79-11-8	Chloroacetic acid	01/01/87
79-21-0	Peracetic acid	01/01/87
79-34-5	1,1,2,2-Tetrachloroethane	01/01/87
79-44-7	Dimethylcarbamyl chloride	01/01/87
79-46-9	2-Nitropropane	01/01/87
80-05-7	4,4′-Isopropylidenediphenol	01/01/87
80-15-9	Cumene hydroperoxide	01/01/87
80-62-6	Methyl methacrylate	01/01/87
81-07-2	Saccharin (only persons who manufacture are subject, no supplier notification) [1,2-Benzisothiazol-3(2H)-one,1,1-dioxide]	01/01/87
81-88-9	C.I. Food Red 15	01/01/87
82-28-0	1-Amino-2-methylanthraquinone	01/01/87
82-68-8	Quintozene [Pentachloronitrobenzene]	C12
84-66-2	Diethyl phthalate	01/01/87
84-74-2	Dibutyl phthalate	01/01/87

CAS No.	Chemical name	Effective date
85-44-9	Phthalic anhydride	01/01/87
85-68-7	Butyl benzyl phthalate	01/01/87
86-30-6	*N*-Nitrosodiphenylamine	01/01/87
87-62-7	2,6-Xylidine	01/01/87
87-68-3	Hexachloro-1,3-butadiene	01/01/87
87-86-5	Pentachlorophenol (PCP)	01/01/87
88-06-2	2,4,6-Trichlorophenol	01/01/87
88-75-5	2-Nitrophenol	01/01/87
88-89-1	Picric acid	01/01/87
90-04-0	*o*-Anisidine	01/01/87
90-43-7	2-Phenylphenol	01/01/87
90-94-8	Michler's ketone	01/01/87
91-08-7	Toluene-2,6-diisocyanate	01/01/87
91-20-3	Naphthalene	01/01/87
91-22-5	Quinoline	01/01/87
91-59-8	*beta*-Naphthylamine	01/01/87
91-94-1	3,3′-Dichlorobenzidine	01/01/87
92-52-4	Biphenyl	01/01/87
92-67-1	4-Aminobiphenyl	01/01/87
92-87-5	Benzidine	01/01/87
92-93-3	4-Nitrobiphenyl	01/01/87
94-36-0	Benzoyl peroxide	01/01/87
94-59-7	Safrole	01/01/87
94-75-7	2,4-D [Acetic acid, (2,4-dichlorophenoxy)-]	01/01/87
95-47-6	*o*-Xylene	01/01/87
95-48-7	*o*-Cresol	01/01/87
95-50-1	1,2-Dichlorobenzene	01/01/87
95-53-4	*o*-Toluidine	01/01/87
95-63-6	1,2,4-Trimethylbenzene	01/01/87
95-80-7	2,4-Diaminotoluene	01/01/87
95-95-4	2,4,5-Trichlorophenol	01/01/87
96-09-3	Styrene oxide	01/01/87
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	01/01/87
96-33-3	Methyl acrylate	01/01/87
96-45-7	Ethylene thiourea	01/01/87
97-56-3	C.I. Solvent Yellow 3	01/01/87
98-07-7	Benzoic trichloride (Benzotrichloride)	01/01/87
98-82-8	Cumene	01/01/87
98-87-3	Benzal chloride	01/01/87
98-88-4	Benzoyl chloride	01/01/87
98-95-3	Nitrobenzene	01/01/87
99-59-2	5-Nitro-*o*-anisidine	01/01/87
100-02-7	4-Nitrophenol	01/01/87
100-21-0	Terephthalic acid	01/01/87
100-41-4	Ethylbenzene	01/01/87
100-42-5	Styrene	01/01/87
100-44-7	Benzyl chloride	01/01/87
100-75-4	*N*-Nitrosopiperidine	01/01/87
101-14-4	4,4′-Methylenebis(2-chloroaniline) (MBOCA)	01/01/87
101-61-1	4,4′-Methylenebis(*N,N*-dimethyl)benzenamine	01/01/87
101-68-8	Methylenebis(phenylisocyanate) (MBI)	01/01/87
101-77-9	4,4′-Methylenedianiline	01/01/87
101-80-4	4,4′-Diaminodiphenyl ether	01/01/87
103-23-1	Bis(2-ethylhexyl) adipete	01/01/87
104-94-9	*p*-Anisidine	01/01/87
105-67-9	2,4-Dimethylphenol	01/01/87
106-42-3	*p*-Xylene	01/01/87
106-44-5	*p*-Cresol	01/01/87
106-46-7	1,4-Dichlorobenzene	01/01/87
106-50-3	*p*-Phenylenediamine	01/01/87
106-51-4	Quinone	01/01/87
106-88-7	1,2-Butylene oxide	01/01/87
106-89-8	Epichlorohydrin	01/01/87
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	01/01/87
106-99-0	1,3-Butadiene	01/01/87
107-02-8	Acrolein	01/01/87
107-05-1	Allyl chloride	01/01/87
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	01/01/87
107-13-1	Acrylonitrile	01/01/87
107-21-1	Ethylene glycol	01/01/87
107-30-2	Chloromethyl methyl ether	01/01/87
108-05-4	Vinyl acetate	01/01/87
108-10-1	Methyl isobutyl ketone	01/01/87

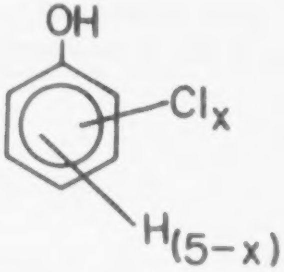
CAS No.	Chemical name	Effective date
108-31-6	Maleic anhydride	01/01/87
108-38-3	*m*-Xylene	01/01/87
108-39-4	*m*-Cresol	01/01/87
108-60-1	Bis(2-chloro-1-methylethyl)ether	01/01/87
108-88-3	Toluene	01/01/87
108-90-7	Chlorobenzene	01/01/87
108-95-2	Phenol	01/01/87
109-86-4	2-Methoxyethanol	01/01/87
110-80-5	2-Ethoxyethanol	01/01/87
110-82-7	Cyclohexane	01/01/87
110-86-1	Pyridine	01/01/87
111-42-2	Diethanolamine	01/01/87
111-44-4	Bis(2-chloroethyl) ether	01/01/87
114-26-1	Propoxur [Phenol, 2-(1-methylethoxy)-, methylcarbamate]	01/01/87
115-07-1	Propylene (Propene)	01/01/87
115-32-2	Dicofol [Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-]	01/01/87
117-79-3	2-Aminoanthraquinone	01/01/87
117-81-7	Di(2-ethylhexyl) phthalate (DEHP)	01/01/87
117-84-0	*n*-Dioctyl phthalate	01/01/87
118-74-1	Hexachlorobenzene	01/01/87
119-90-4	3,3'-Dimethoxybenzidine	01/01/87
119-93-7	3,3'-Dimethylbenzidine (*o*-Tolidine)	01/01/87
120-12-7	Anthracene	01/01/87
120-71-8	*p*-Cresidine	01/01/87
120-80-9	Catechol	01/01/87
120-82-1	1,2,4-Trichlorobenzene	01/01/87
120-83-2	2,4-Dichlorophenol	01/01/87
121-14-2	2,4-Dinitrotoluene	01/01/87
121-69-7	*N,N*-Dimethylaniline	01/01/87
122-66-7	1,2-Diphenylhydrazine (Hydrazobenzene)	01/01/87
123-31-9	Hydroquinone	01/01/87
123-38-6	Propionaldehyde	01/01/87
123-72-8	Butyraldehyde	01/01/87
123-91-1	1,4-Dioxane	01/01/87
126-72-7	Tris-2,3-dibromopropyl) phosphate	01/01/87
126-99-8	Chloroprene	01/01/87
127-18-4	Tetrachloroethylene (Perchloroethylene)	01/01/87
128-66-5	C.I. Vat Yellow 4	01/01/87
131-11-3	Dimethyl phthalate	01/01/87
132-64-9	Dibenzofuran	01/01/87
133-06-2	Captan [1H-Isoindole-1,3(2H)-dione,3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-]	01/01/87
133-90-4	Chloramben [Benzoic acid, 3-amino-2,5-dichloro-]	01/01/87
134-29-2	*o*-Anisidine hydrochloride	01/01/87
134-32-7	*alpha*-Naphthylamine	01/01/87
135-20-6	Cupferron [Benzeneamine, N-hydroxy-N-nitroso, ammonium salt]	01/01/87
139-13-9	Nitrilotriacetic acid	01/01/87
139-65-1	4,4'-Thiodianiline	01/01/87
140-88-5	Ethyl acrylate	01/01/87
141-32-2	Butyl acrylate	01/01/87
151-56-4	Ethyleneimine (Aziridine)	01/01/87
156-10-5	*p*-Nitrosodiphenylamine	01/01/87
156-62-7	Calcium cyanamide	01/01/87
302-01-2	Hydrazine	01/01/87
309-00-2	Aldrin[1,4:5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha.,4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-]	01/01/87
334-88-3	Diazomethane	01/01/87
463-58-1	Carbonyl sulfide	01/01/87
492-80-8	C.I. Solvent Yellow 34 (Auramine)	01/01/87
505-60-2	Mustard gas [Ethane, 1,1'-thiobis[2-chloro-]	01/01/87
510-15-6	Chlorobenzilate[Benezeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-, ethyl ester]	01/01/87
532-27-4	2-Chloroacetophenone	01/01/87
534-52-1	4,6-Dinitro-*o*-cresol	01/01/87
540-59-0	1,2-Dichloroethylene	01/01/87
541-41-3	Ethyl chloroformate	01/01/87
541-73-1	1,3-Dichlorobenzene	01/01/87
542-75-6	1,3-Dichloropropylene	01/01/87
542-88-1	Bis(chloromethyl) ether	01/01/87
569-64-2	C.I. Basic Green 4	01/01/87
606-20-2	2,6-Dinitrotoluene	01/01/87
615-05-4	2,4-Diaminoanisole	01/01/87
621-64-7	*N*-Nitrosodi-*n*-propylamine	01/01/87
624-83-9	Methyl isocyanate	01/01/87

CAS No.	Chemical name	Effective date
636-21-5	*o*-Toluidine hydrochloride	01/01/87
680-31-9	Hexamethylphosphoramide	01/01/87
684-93-5	*N*-Nitroso-*N*-methylurea	01/01/87
759-73-9	*N*-Nitroso-*N*-ethylurea	01/01/87
842-07-9	C.I. Solvent Yellow 14	01/01/87
924-16-3	*N*-Nitrosodi-*n*-butylamine	01/01/87
961-11-5	Tetrachlorvinphos [Phosphoric acid, 2-chloro-1-(2,4,5-trichlorophenyl)ethenyl dimethyl ester]	01/01/87
989-38-8	C.I. Basic Red I	01/01/87
1120-71-4	Propane sultone	01/01/87
1163-19-5	Decabromodiphenyl oxide	01/01/87
1310-73-2	Sodium hydroxide (solution)	01/01/87
1313-27-5	Molybdenum trioxide	01/01/87
1314-20-1	Thorium dioxide	01/01/87
1319-77-3	Cresol (mixed isomers)	01/01/87
1330-20-7	Xylene (mixed isomers)	01/01/87
1332-21-4	Asbestos (friable)	01/01/87
1335-87-1	Hexachloronaphthalene	01/01/87
1336-36-3	Polychlorinated biphenyls (PCBs)	01/01/87
1344-28-1	Aluminum oxide	01/01/87
1464-53-5	Diepoxybutane	01/01/87
1582-09-8	Trifluralin [Benzeneamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-]	01/01/87
1634-04-4	Methyl *tert*-butyl ether	01/01/87
1836-75-5	Nitrofen [Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-]	01/01/87
1897-45-6	Chlorothalonil [1-3-Benzenedicarbonitrile,2,4,5,6-tetrachloro-]	01/01/87
1937-37-7	C.I. Direct Black 38	01/01/87
2164-17-2	Fluometuron [Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-]	01/01/87
2234-13-1	Octachloronaphthalene	01/01/87
2303-16-4	Diallate [Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl)ester]	01/01/87
2602-46-2	C.I. Direct Blue 6	01/01/87
2832-40-8	C.I. Disperse Yellow 3	01/01/87
3118-97-6	C.I. Solvent Orange 7	01/01/87
3761-53-3	C.I. Food Red 5	01/01/87
4549-40-0	*N*-Nitrosomethylvinylamine	01/01/87
4680-78-8	C.I. Acid Green 3	01/01/87
6484-52-2	Ammonium nitrate (solution)	01/01/87
7429-90-5	Aluminum (fume or dust)	01/01/87
7439-92-1	Lead	01/01/87
7439-96-5	Manganese	01/01/87
7439-97-6	Mercury	01/01/87
7440-02-0	Nickel	01/01/87
7440-22-4	Silver	01/01/87
7440-28-0	Thallium	01/01/87
7440-36-0	Antimony	01/01/87
7440-38-2	Arsenic	01/01/87
7440-39-3	Barium	01/01/87
7440-41-7	Beryllium	01/01/87
7440-43-9	Cadmium	01/01/87
7440-47-3	Chromium	01/01/87
7440-48-4	Cobalt	01/01/87
7440-50-8	Copper	01/01/87
7440-62-2	Vanadium (fume or dust)	01/01/87
7440-66-6	Zinc (fume or dust)	01/01/87
7550-45-0	Titanium tetrachloride	01/01/87
7647-01-0	Hydrochloric acid	01/01/87
7664-38-2	Phosphoric acid	01/01/87
7664-39-3	Hydrogen fluoride	01/01/87
7664-41-7	Ammonia	01/01/87
7664-93-9	Sulfuric acid	01/01/87
7697-37-2	Nitric acid	01/01/87
7723-14-0	Phosphorus (yellow or white)	01/01/87
7782-49-2	Selenium	01/01/87
7782-50-5	Chlorine	01/01/87
7783-20-2	Ammonium sulfate (solution)	01/01/87
8001-35-2	Toxaphene	01/01/87
10034-93-2	Hydrazine sulfate	01/01/87
10049-04-4	Chlorine dioxide	01/01/87
12122-67-7	Zineb [Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex]	01/01/87
12427-38-2	Maneb [Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex]	01/01/87
16071-86-6	C.I. Direct Brown 95	01/01/87
16543-55-8	*N*-Nitrosonornicotine	01/01/87
20816-12-0	Osmium tetroxide	01/01/87
25321-22-6	Dichlorobenzene (mixed isomers)	

CAS No.	Chemical name	Effective date
25376-45-8	Diaminotoluene (mixed isomers)	01/01/87
39156-41-7	2,4-Diaminoanisole sulfate	01/01/87

(c) *Chemical categories in alphabetical order.*

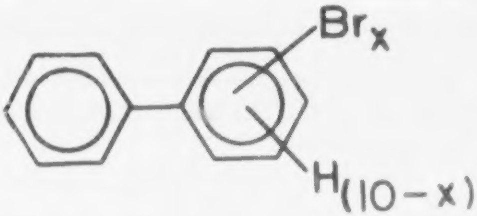
Category name	Effective date
Antimony Compounds: Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure	01/01/87
Arsenic Compounds: Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure	01/01/87
Barium Compounds: Includes any unique chemical substance that contains barium as part of that chemical's infrastructure	01/01/87
Beryllium Compounds: Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure	01/01/87
Cadmium Compounds: Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure	01/01/87
Chlorophenols	01/01/87



Where x=1 to 5

Category name	Effective date
Chromium Compounds: Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure	01/01/87
Cobalt Compounds: Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure	01/01/87
Copper Compounds: Includes any unique chemical substance that contains copper as part of that chemical's infrastructure	01/01/87
Cyanide Compounds: $X^+ CN^-$ where $X = H^-$ or any other group where a formal dissociation can be made. For example KCN, or $Ca(CN)_2$	01/01/87
Glycol Ethers: Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol $R-(OCH_2CH_2)n^{-OR'}$ Where: n=1, 2, or 3 R=alkyl or aryl groups R=R' H, or groups which, when removed, yield glycol ethers with the structure	01/01/87

Category name	Effective date
$R-(OCH_2CH_2)_n-OH$	
Polymers are excluded from this category.	
Lead Compounds: Includes any unique chemical substance that contains lead as part of that chemical's infrastructure	01/01/87
Manganese Compounds: Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure	01/01/87
Mercury Compounds: Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure	01/01/87
Nickel Compounds: Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure	01/01/87
Polybrominated Biphenyls (PBBs)	01/01/87



Where x=1 to 10

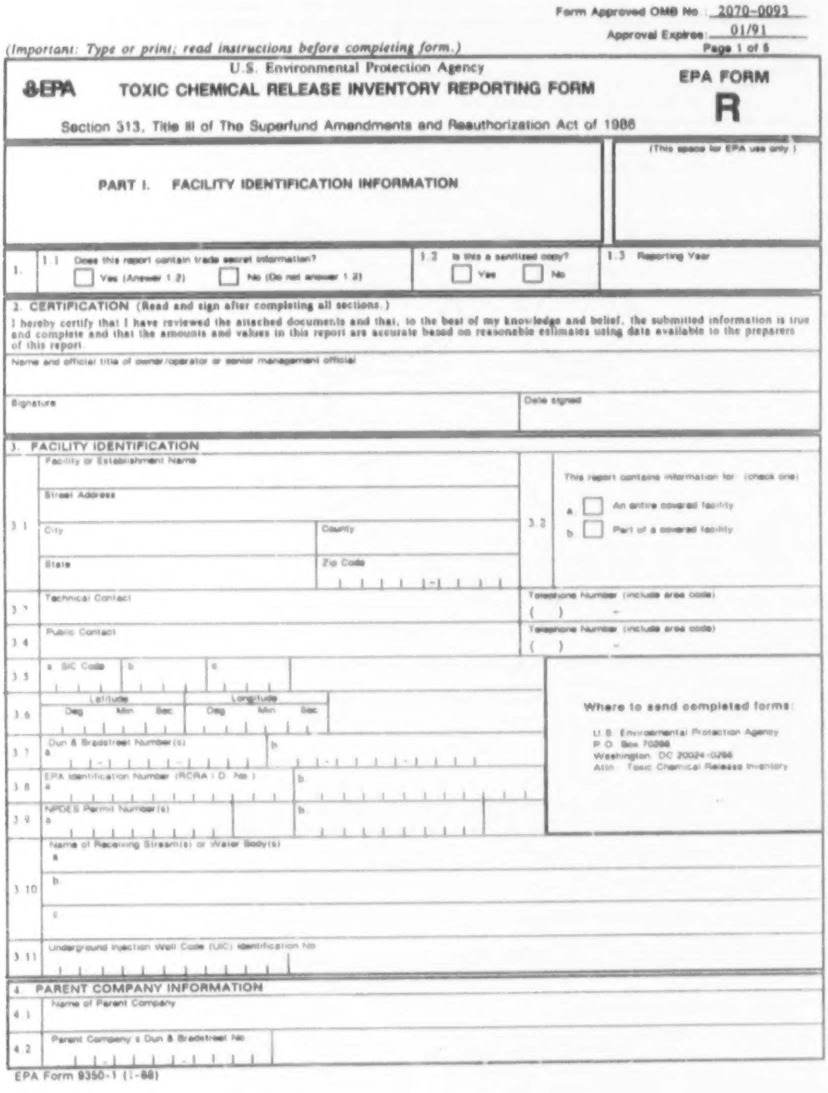
Category name	Effective date
Selenium Compounds: Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure	01/01/87
Silver Compounds: Includes any unique chemical substance that contains silver as part of that chemical's infrastructure	01/01/87
Thallium Compounds: Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure	01/01/87
Zinc Compounds: Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure	01/01/87

[53 FR 4525, Feb. 16, 1988; 53 FR 12748, Apr. 18, 1988, as amended at 53 FR 23112, June 20, 1988; 53 FR 39475, Oct. 8, 1988; 54 FR 12913, Mar. 29, 1989; 54 FR 25851, June 20, 1989]

Subpart E—Forms and Instructions

§ 372.85 Toxic chemical release reporting form and instructions.

(a) *Reporting form.*



Form Approved OMB No.: 2070-0093
Approval Expires: 01/91
Page 1 of 5

(Important: Type or print; read instructions before completing form.)

U.S. Environmental Protection Agency

EPA **TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM**

Section 313, Title III of The Superfund Amendments and Reauthorization Act of 1986

EPA FORM R

(This space for EPA use only.)

PART I. FACILITY IDENTIFICATION INFORMATION

1. 1.1 Does this report contain trade secret information? ☐ Yes (Answer 1.2) ☐ No (Do not answer 1.2)
1.2 Is this a sanitized copy? ☐ Yes ☐ No
1.3 Reporting Year

2. CERTIFICATION (Read and sign after completing all sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official

Signature

Date signed

3. FACILITY IDENTIFICATION

3.1 Facility or Establishment Name
Street Address
City
County
State
Zip Code

3.2 This report contains information for: (check one)
a. ☐ An entire covered facility
b. ☐ Part of a covered facility

3.3 Technical Contact
Telephone Number (include area code) ( ) -

3.4 Public Contact
Telephone Number (include area code) ( ) -

3.5 a. SIC Code b. c.

3.6 Latitude Deg Min Sec Longitude Deg Min Sec

3.7 Dun & Bradstreet Number(s) a. b.

3.8 EPA Identification Number (RCRA I.D. No.) a. b.

3.9 NPDES Permit Number(s) a. b.

3.10 Name of Receiving Stream(s) or Water Body(s)
a.
b.
c.

3.11 Underground Injection Well Code (UIC) Identification No.

Where to send completed forms:

U.S. Environmental Protection Agency
P.O. Box 70266
Washington, DC 20024-0266
Attn: Toxic Chemical Release Inventory

4. PARENT COMPANY INFORMATION

4.1 Name of Parent Company

4.2 Parent Company's Dun & Bradstreet No.

EPA Form 9350-1 (1-88)

(Important: Type or print; read instructions before completing form.)

Page 2 of 5

(This space for EPA use only.)

EPA FORM R
PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

1. PUBLICLY OWNED TREATMENT WORKS (POTW)

Facility Name

Street Address

City | County

State | Zip

2. OTHER OFF-SITE LOCATIONS - Number these locations sequentially on this and any additional page of this form you use.

☐ **Other off-site location**

EPA Identification Number (RCRA ID. No.)

Facility Name

Street Address

City | County

State | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ **Other off-site location**

EPA Identification Number (RCRA ID. No.)

Facility Name

Street Address

City | County

State | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ **Other off-site location**

EPA Identification Number (RCRA ID. No.)

Facility Name

Street Address

City | County

State | Zip

Is location under control of reporting facility or parent company? ☐ Yes ☐ No

☐ Check if additional pages of Part II are attached

EPA Form 9350-1(1-88)

(Important: Type or print; read instructions before completing form.)

Page 3 of 5

(This space for EPA use only.)

EPA FORM R
PART III. CHEMICAL SPECIFIC INFORMATION

1. CHEMICAL IDENTITY

1.1 ☐ **Trade Secret** (Provide a generic name in 1.4 below. Attach substantiation form to this submission.)

1.2 CAS # ☐☐☐☐☐☐-☐☐-☐ (Use leading zeros if CAS number does not fill space provided.)

1.3 Chemical or Chemical Category Name

1.4 Generic Chemical Name (Complete only if 1.1 is checked.)

2. **MIXTURE COMPONENT IDENTITY** (Do not complete this section if you have completed Section 1.)

Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation))

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1 **Manufacture:**
- a. ☐ Produce
- b. ☐ Import
- c. ☐ For on-site use/processing
- d. ☐ For sale/distribution
- e. ☐ As a byproduct
- f. ☐ As an impurity

3.2 **Process:**
- a. ☐ As a reactant
- b. ☐ As a formulation component
- c. ☐ As an article component
- d. ☐ Repackaging only

3.3 **Otherwise Used:**
- a. ☐ As a chemical processing aid
- b. ☐ As a manufacturing aid
- c. ☐ Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON SITE AT ANY TIME DURING THE CALENDAR YEAR

☐☐ (enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT

You may report releases of less than 1,000 lbs. by checking ranges under A.1		A. Total Release (lbs/yr)				B. Basis of Estimate (enter code)	
		A.1 Reporting Ranges			A.2 Enter Estimate		
		0	1-499	500-999			
5.1 **Fugitive or non-point air emissions**	5.1a					5.1b ☐	
5.2 **Stack or point air emissions**	5.2a					5.2b ☐	
5.3 **Discharges to water** (Enter letter code from Part I Section 3.10 for stream(s).) 5.3.1 ☐	5.3.1a					5.3.1b ☐	C. % From Stormwater 5.3.1c
5.3.2 ☐	5.3.2a					5.3.2b ☐	5.3.2c
5.3.3 ☐	5.3.3a					5.3.3b ☐	5.3.3c
5.4 **Underground injection**	5.4a					5.4b ☐	
5.5 **Releases to land** 5.5.1 ☐☐☐ (enter code)	5.5.1a					5.5.1b ☐	
5.5.2 ☐☐☐ (enter code)	5.5.2a					5.5.2b ☐	
5.5.3 ☐☐☐ (enter code)	5.5.3a					5.5.3b ☐	

☐ (Check if additional information is provided on Part IV-Supplemental Information.)

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6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS	A. Total Transfers (lbs/yr)				B. Basis of Estimate (enter code)	C. Type of Treatment/Disposal (enter code)
You may report transfers of less than 1,000 lbs. by checking ranges under A.1	A.1 Reporting Ranges 0	1-499	500-999	A.2 Enter Estimate		
6.1 Discharge to POTW					6.1b ☐	
6.2 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.2b ☐	6.2c ☐☐☐
6.3 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.3b ☐	6.3c ☐☐☐
6.4 Other off-site location (Enter block number from Part II, Section 2.) ☐					6.4b ☐	6.4c ☐☐☐

☐ (Check if additional information is provided on Part IV-Supplemental Information)

7. WASTE TREATMENT METHODS AND EFFICIENCY

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.1a ☐	7.1b ☐☐☐	7.1c ☐	7.1d ☐	7.1e %	7.1f ☐	☐
7.2a ☐	7.2b ☐☐☐	7.2c ☐	7.2d ☐	7.2e %	7.2f ☐	☐
7.3a ☐	7.3b ☐☐☐	7.3c ☐	7.3d ☐	7.3e %	7.3f ☐	☐
7.4a ☐	7.4b ☐☐☐	7.4c ☐	7.4d ☐	7.4e %	7.4f ☐	☐
7.5a ☐	7.5b ☐☐☐	7.5c ☐	7.5d ☐	7.5e %	7.5f ☐	☐
7.6a ☐	7.6b ☐☐☐	7.6c ☐	7.6d ☐	7.6e %	7.6f ☐	☐
7.7a ☐	7.7b ☐☐☐	7.7c ☐	7.7d ☐	7.7e %	7.7f ☐	☐
7.8a ☐	7.8b ☐☐☐	7.8c ☐	7.8d ☐	7.8e %	7.8f ☐	☐
7.9a ☐	7.9b ☐☐☐	7.9c ☐	7.9d ☐	7.9e %	7.9f ☐	☐
7.10a ☐	7.10b ☐☐☐	7.10c ☐	7.10d ☐	7.10e %	7.10f ☐	☐
7.11a ☐	7.11b ☐☐☐	7.11c ☐	7.11d ☐	7.11e %	7.11f ☐	☐
7.12a ☐	7.12b ☐☐☐	7.12c ☐	7.12d ☐	7.12e %	7.12f ☐	☐
7.13a ☐	7.13b ☐☐☐	7.13c ☐	7.13d ☐	7.13e %	7.13f ☐	☐
7.14a ☐	7.14b ☐☐☐	7.14c ☐	7.14d ☐	7.14e %	7.14f ☐	☐

☐ (Check if additional information is provided on Part IV-Supplemental Information.)

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of modification (enter code)	B. Quantity of the chemical in the wastestream prior to treatment/disposal			C. Index	D. Reason for action (enter code)
☐☐	Current reporting year (lbs/yr) ______	Prior year (lbs/yr) ______	Or percent change ______ %	☐.☐	☐☐

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(Important: Type or print; read instructions before completing form.)

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(This space for EPA use only.)

EPA FORM R

PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Parts I and III. Number or letter this information sequentially from prior sections (e.g., D.E. F. or 5.54, 5.55).

ADDITIONAL INFORMATION ON FACILITY IDENTIFICATION (Part I - Section 3)

3.5	SIC Code		
3.7	Dun & Bradstreet Number(s)		
3.8	EPA Identification Number(s) (RCRA I.D. No.)		
3.9	NPDES Permit Number(s)		
3.10	Name of Receiving Stream(s) or Water Body(s)		

ADDITIONAL INFORMATION ON RELEASES TO LAND (Part III - Section 5.5)

Releases to Land	A. Total Release (lbs/yr)					B. Basis of Estimate (enter code)
		A.1 Reporting Ranges			A.2 Enter Estimate	
		0	1-499	500-999		
5.5___ ☐☐☐ (enter code)	5.5___a					5.5___b ☐
5.5___ ☐☐☐ (enter code)	5.5___a					5.5___b ☐
5.5___ ☐☐☐ (enter code)	5.5___a					5.5___b ☐

ADDITIONAL INFORMATION ON OFF-SITE TRANSFER (Part III - Section 6)

	A. Total Transfers (lbs/yr)					B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
		A.1 Reporting Ranges			A.2 Enter Estimate		
		0	1-499	500-999			
6.___ Discharge to POTW	6.___a					6.___b ☐	
6.___ Other off-site location (Enter block number from Part II, Section 2.) ☐	6.___a					6.___b ☐	6.___c ☐☐☐
6.___ Other off-site location (Enter block number from Part II, Section 2.) ☐	6.___a					6.___b ☐	6.___c ☐☐☐

ADDITIONAL INFORMATION ON WASTE TREATMENT (Part III - Section 7)

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes	No
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐
7.___a ☐	7.___b ☐☐☐	7.___c ☐	7.___d ☐	7.___e %	7.___f ☐	☐

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b. Instructions.

INSTRUCTIONS FOR COMPLETING EPA FORM R, THE TOXIC CHEMICAL RELEASE REPORTING FORM

GENERAL INFORMATION

A complete report Form R must be submitted for each toxic chemical manufactured, processed, or otherwise used at each covered facility as prescribed in the reporting rule in 40 CFR Part 372. These instructions supplement and elaborate on the requirements in the reporting rule. Together with the reporting rule, they constitute the reporting requirements; you should read both before attempting to complete Form R. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

The Toxic Chemical Release Reporting Form, EPA Form R, consists of four parts:

- Part I, Facility Identification Information;
- Part II, Off-Site Locations to Which Toxic Chemicals are Transferred in Wastes;
- Part III, Chemical Specific Information; and
- Part IV, Supplemental Information.

Form R is designed so that a majority of the information required in Part I and all of the information required in Part II should be the same for each chemical reported by your facility. If the information in Parts I and II are identical for two or more chemicals, you may submit photostatic copies of those parts for those chemicals as long as each Part I has an original signature on the certification statement. Part III must be completed separately for each chemical. Part IV provides additional space, if needed, to complete the information required by the preceding sections of the form.

A complete report for any listed toxic chemical that is not claimed trade secret consists of the following completed parts:

- Part I with an original signature on the certification statement (Section 3);
- Part II,
- Part III (Section 8 is optional); and
- If applicable, Part IV.

A complete report for a toxic chemical claimed trade secret includes all of the above items plus the following:

- A completed trade secret substantiation form;
- A "sanitized" version of the report in which the chemical identity items (Part III, Sections 1.2 and 1.3) have been left blank but in which a generic chemical name has been supplied (Part III, Section 1.4); and
- A "sanitized" version of the trade secret substantiation form.

WHEN THE REPORT MUST BE SUBMITTED

The report for any calendar year must be submitted on or before July 1 of the following year (e.g., the report for calendar year 1987, January through December, must be submitted on or before July 1, 1988).

WHERE TO SEND THE REPORT

Submit reports, including reports containing trade secret claims (i.e., sanitized) to:

U.S. Environmental Protection Agency
P.O. Box 70266
Washington, D.C. 20024-0266
Attn: Toxic Chemical Release Inventory

In addition, you must send a copy of the report to the State (State of the U.S., the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the U.S. has jurisdiction) in which the facility is located. States will provide addresses where the copies of the reports are to be sent. Copies of the report sent to the State should be the "sanitized," non-trade-secret version of the report, unless the State specifically requests otherwise. For additional information, refer to the discussion of trade secret/confidentiality claims in the instructions for completing Part III, Section 1, of the form.

HOW TO OBTAIN FORMS AND OTHER INFORMATION

Additional copies of EPA Form R and related guidance documents may be obtained from:

Emergency Planning and Community Right-
to-Know Hotline
U.S. Environmental Protection Agency
WH-562A
401 M Street, S.W.
Washington, D.C. 20460
(800) 535-0202
(202) 479-2449 (Washington D.C. and Alaska)

INSTRUCTIONS FOR COMPLETING SPECIFIC SECTIONS OF EPA FORM R

The following are specific instructions for completing each section of EPA Form R. The number designations of the parts and sections of these instructions correspond to those in Form R unless otherwise indicated.

PART I. FACILITY IDENTIFICATION INFORMATION

1.1 Does This Report Contain Trade Secret Information?

You must answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part III, Sections 1.2 and 1.3 may be designated as trade secret. If you are making a trade secret claim, answer by marking the "yes" box and proceed to Section 1.2. (See Part III, Section 1, of these instructions for specific instructions on trade secrecy claims.) If the answer is no, proceed to Section 1.3.

1.2 Is This a Sanitized Copy?

You must answer this question only after you have completed the rest of the report. Answer yes if this copy of the report is the public "sanitized" version of a report where the chemical identity is claimed trade secret in Part III, Section 1.4 of the report. Otherwise, answer no.

1.3 Reporting Year

In Section 1.3, you must enter the year to which the reported information applies, not the year in which you are submitting the report.

2. Certification

The certification statement must be signed by the owner or operator, or a senior official with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Each report must contain an original signature. Print or type the name and title of the person who signs the statement in the space provided. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

3. Facility Identification

3.1 Facility Name and Location

You must enter the name of your facility (plant site name or appropriate facility designation), street address, city, county, state, and zip code in the space provided. You may not use a post office box number for this location information. The address provided should be the location where the chemicals are manufactured, processed, or otherwise used.

3.2 Full or Partial Facility Indication

You must indicate whether your report is for the covered facility as a whole or for part of a covered facility. Check box a. if the report contains information about a chemical for an entire covered facility. Check box b. if the report contains information about a chemical but for only part of a covered facility.

The SIC code system classifies business "establishments," which are defined as "distinct and separate economic activities [which] are performed at a single physical location." Under section 372.30(c) of the reporting rule, you may choose to submit a separate Form R for each establishment, or for groups of establishments, in your covered facility. This allows you the option of reporting separately on the activities involving a toxic chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that chemical for the entire facility. You may do this provided that all releases of the toxic chemical from the entire covered facility are reported. However, if an establishment or group of establishments does not manufacture, process, otherwise use, or release a toxic chemical, then you do not have to submit a report on that chemical from that establishment or group of establishments.

3.3 Technical Contact

You must enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on the form. This person does not have to be the person who prepares the report or signs the certification statement. However, this person must have detailed knowledge of the report to be able to respond to questions.

3.4 Public Contact

You must enter the name and telephone number of a person who can respond to questions from the public about the report. If you choose to designate the same person as both the technical and the public contact, enter "same as 3.3" in this space. If no public contact is designated in Section 3.4, EPA will treat the technical contact as the public contact.

3.5 Standard Industrial Classification (SIC) Code

You must enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility. If the report covers more than one establishment, enter the primary 4 digit SIC code for each establishment. You are only required to enter SIC codes for establishments within the facility that fall within SIC codes 20 through 39 as identified in section 372.22 of the reporting rule. Use the Supplemental Information sheet (Part IV) if you need to enter more than three SIC codes.

3.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. You must supply the latitude and longitude for calendar year 1987 reports if the information is readily available to you. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. If these geographic coordinates are not readily available to you for calendar year 1987 reports, enter not applicable [N/A]. All facilities are required to provide this information in reports submitted for the calendar year 1988 and subsequent years. Use leading place holding zeros.

3.7 Facility Dun and Bradstreet Number

You must enter the number assigned by Dun and Bradstreet for your facility or each establishment within your facility. This may be available from your facility's financial office. If none of your establishments have been assigned Dun and Bradstreet Numbers, indicate this in Section 3.7 by entering not applicable [N/A] in box a. If only some of your establishments have been assigned Dun and Bradstreet numbers, indicate this in Section 3.7 by entering those numbers. Use leading place holding zeros. For more than two establishments, use the Supplemental Information sheet (Part IV).

3.8 EPA Identification Number

If your facility has been assigned EPA Identification Numbers, you must enter those numbers. The EPA I.D. Number is a 12-digit number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA are not likely to have an assigned EPA I.D. Number. If your facility does not have an EPA I.D. Number, enter not applicable [N/A] in box a. If your facility has more than two numbers, use the Supplemental Information sheet (Part IV). Use leading place holding zeros.

3.9 NPDES Permit Numbers

You must enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES). This 9-digit permit number is assigned to your facility by EPA or the State under the authority of the Clean Water Act. If your facility has more than two permits, use the Supplemental Information sheet (Part IV). Use leading place holding zeros. If your facility does not have a permit, enter not applicable [N/A] in box a.

3.10 Name of Receiving Stream or Water Body

You must enter the name of each surface water body or receiving stream to which chemicals being reported are directly discharged. Report the name of each receiving stream or water body as it appears on the NPDES permit for the facility. Enter not applicable [N/A] to any unneeded spaces. If your facility discharges the toxic chemical to more than three receiving streams or water bodies, use the Supplemental information sheet (Part IV).

3.11 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject chemical-containing waste which includes any toxic chemical being reported into Class 1 deep wells, you must enter the Underground Injection Control (UIC) 12-digit identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit, enter not applicable [N/A] in this space.

4. Parent Company Information

You must provide information on your parent company. For purposes of this form, parent company is defined as a company which directly owns at least 50 percent of the voting stock of another company.

4.1 Name of Parent Company

You must enter the name of the corporation or other business entity that is your parent company. If you have no parent company, enter not applicable [N/A].

4.2 Parent Company's Dun & Bradstreet Number

If applicable, you must enter the Dun and Bradstreet Number for your parent company. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, enter not applicable [N/A]. Use leading place holding zeros.

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

This section requires a listing of all off-site locations to which you transfer wastes containing the toxic chemical. The information that you enter in this section relates to data to be reported in Part III, Section 6, of the form. List only publicly owned treatment works (POTW) and treatment or disposal facilities. Do not list locations to which products containing the toxic chemical are shipped for sale or distribution in commerce or for further use. Also, do not list locations to which wastes containing the chemical are sold or sent for recovery, recycling, or reuse of the toxic chemical.

1. Publicly Owned Treatment Works (POTW)

You must enter the name and address of the POTW to which your facility discharges wastewater containing any toxic chemical you are reporting. If you do not discharge wastewater containing reported toxic chemicals to a POTW, enter not applicable [N/A]. If you discharge wastewater containing toxic chemicals to more than one POTW, use additional copies of Part II.

2. Other Off-Site Locations

In the block next to the heading "Other off-site location," enter a number. For the first such off-site location enter "1" in the block. Continue numbering the off-site locations in ascending order. This is the block number required by Part III, Section 6. If your facility transfers the toxic chemical to more than three off-site locations, use additional copies of Part II and continue numbering these locations in ascending order.

In the spaces provided, you must enter the name and address of each location (other than POTWs) to which you ship or transfer wastes containing the toxic chemical. Also enter the RCRA I.D. Number (EPA I.D. Number) for each such location, if known to you. Such information may be found on the Uniform Hazardous Waste Manifest which is required by RCRA regulations.

You must also indicate in the space provided whether the location is owned or controlled by your facility or your parent company.

PART III. CHEMICAL SPECIFIC INFORMATION

1.1 Trade Secret Block

If you are claiming chemical identity as a trade secret, you must mark the trade secret claim box in Section 1.1. In addition, you must attach a completed trade secret substantiation form to the report, as set forth in the trade secret rule in 40 CFR Part 350. When the chemical identity is claimed trade secret, you must also provide a generic name in Section 1.4.

Note: If you complete and submit your Toxic Chemical Release Inventory Reporting Form before the trade secret rule is in effect, you are still required to substantiate your claim that the specific chemical identity is a trade secret. Accordingly, you should follow the provisions of the proposed trade secret rule and use the proposed trade secret substantiation form which appeared in the FEDERAL REGISTER of October 15, 1987 (52FR 38312-38377).

1.2 CAS Registry Number

You must enter the Chemical Abstracts Service (CAS) registry number that appears in section 372.65 of the reporting rule for the chemical being reported. Use leading place holding zeros. If you are reporting one of the chemical categories in section 372.65 of the rule (e.g., copper compounds), enter [N/A] in the CAS number space. CAS numbers are cross-referenced with an alphabetical list of trade names and chemical names in section 372.65 of the rule.

1.3 Chemical or Chemical Category Name

You must enter in the space provided the name of the chemical or chemical category as it is listed in section 372.65 of the reporting rule. Only use names listed in section 372.65.

1.4 Generic Chemical Name

You must complete Section 1.4 if you are claiming the specific chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in

Section 1.1. The generic chemical name must be descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less.

2. Mixture Component Identity

Use this section to report a mixture component that you know exceeds a threshold. Do not complete this section if you have completed Section 1 of Part III.

You may have received a mixture or trade name product from another person which you were told contains a section 313 toxic chemical, but that person did not tell you the specific chemical name or CAS number of the toxic chemical. The person may have given you a generic chemical name and the percentage composition of the toxic chemical in the mixture or trade name product under section 372.45 of the reporting rule. If you determine that you have imported, processed, or otherwise used the toxic chemical in the mixture or trade name product in excess of an applicable threshold, you must enter the generic chemical name given to you by your supplier in Section 2. If your supplier did not give you a generic chemical name, you must enter the name by which the supplier identified the chemical to you. (In some cases, this may be the same as the name of the mixture or trade name product.)

For example, your facility uses 20,000 pounds of a solvent which your supplier has told you contains eighty percent "chlorocyclocarbon," his generic name for a chemical subject to reporting under section 313. You therefore know that you have exceeded the use threshold for this toxic chemical. You would enter the name "chlorocyclocarbon," in the space provided in Section 2.

3. Activities and Uses of the Chemical at the Facility

This section requires an indication of whether the chemical is manufactured (including imported), processed, or otherwise used at the facility for which the form is being filed and the general nature of such activities and uses at the facility during the calendar year. Report activities that take place only at your facility, not activities that take place at other facilities involving your products. You must mark all of the appropriate blocks in this Section that apply to the activities at your facility. Refer to the definitions of "manufacture," "process," and "otherwise used" in section 372.3 of the reporting rule for explanations supplementing those provided below.

3.1 Manufacture

a. Produce.
A chemical included in this category is produced at the facility.

b. Import.
A chemical included in this category is imported to the facility.

c. For on-site use/processing.
A chemical included in this category is manufactured and then further processed or otherwise used at the same facility.

d. For sale/distribution.
A chemical in this category is manufactured specifically for sale or distribution outside the manufacturing facility.

e. As a byproduct.
A chemical in this category is produced coincidentally during the production, processing, use, or disposal of another chemical substance or mixture, and following its production, is separated from that other chemical substance or mixture.

f. As an impurity.
A chemical in this category is produced coincidentally with another chemical substance, and is processed, used, or distributed with it.

3.2 Process (incorporative-type activities)

a. As reactant.
A natural or synthetic chemical used in chemical reactions for the manufacture of another chemical substance or of a product. Includes, but is not limited to, feedstocks, raw materials, intermediates, and initiators.

b. As a formulation component.
A chemical added to a product or product mixture prior to further distribution of the product that aids the performance of the product in its use. Examples include, but are not limited to, additives, dyes, reaction diluents, initiators, solvents, inhibitors, emulsifiers, surfactants, lubricants, flame retardants, and rheological modifiers.

c. As an article component.
A chemical substance that becomes an integral component of an article distributed for industrial, trade, or consumer use.

d. Repackaging only.
Processing or preparation of a chemical or product mixture for distribution in commerce in a different form, state, or quantity.

3.3 Otherwise Used (non-incorporative-type activities)

a. As a chemical processing aid.
A chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but does not intentionally remain in or become part of the product or product mixture. Examples of such chemicals include, but are not limited to, process solvents, catalysts, inhibitors, initiators, reaction terminators, and solution buffers.

b. As a manufacturing aid.
A chemical whose function is to aid the manufacturing process but does not become part of the resulting product. Examples include, but are not limited to, lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.

c. Ancillary or other use.
A chemical in this category is used at a facility for purposes other than as a chemical processing aid or manufacturing aid as described above. Includes, but is not limited to, cleaners, degreasers, lubricants, and fuels.

4. Maximum Amount of the Chemical On Site at Any Time During the Calendar Year

You must insert the appropriate code (see below) that indicates the maximum quantity of the chemical (in storage tanks, process vessels, on-site shipping containers, etc.) at your facility at any time during the calendar year. If the chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time.

ange Code	Weight Range in Pounds From...	To....
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

f the toxic chemical was present at your facility as part f a mixture or trade name product, to determine the naximum quantity of the chemical present at the facility ou must calculate only the weight of the toxic chemical, ot the weight of the entire mixture or trade name roduct. See section 372.30(b) of the reporting rule for urther information on how to calculate the weight of the hemical in the mixture or trade name product.

5. Releases of the Chemical to the Environment

In Section 5 you must account for the total aggregate releases of the toxic chemical from your facility to the environment for the calendar year. Releases to the environment include emissions to the air, discharges to surface waters, and releases to land and underground injection wells.

All air releases of the chemical from the facility must be covered. In case of doubt about whether an air release is a point or non-point release, it is important that the release be included as one or the other rather than omitted. Do not enter information on individual emission points or releases. Enter only the total release.

5.1 Fugitive or non-point air emissions.

These are releases to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions.

5.2 Stack or point air emissions.

These are releases to the air that are through stacks, vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from control equipment would generally fall in this category.

5.3 Discharges to water

You must enter the applicable letter code for the receiving stream or water body from Section 3.10 of Part I of the form. Also, you must enter the total annual amount of the chemical released from all discharge points at the facility to each receiving stream or water body. You must include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff if applicable (see instructions for column C below). Do not include "indirect" discharges to surface waters such as to a POTW or off-site wastewater treatment facility. These must be reported in Section 6.

5.4 Underground injection

You must enter the total annual amount of the chemical that was injected into wells, including Class I and other types, at the facility.

5.5 Releases to land

You must report quantities of the chemical that were landfilled, impounded, or otherwise disposed of at the facility. Do not report land disposal at off-site locations in this section. You must enter the appropriate disposal code from the following list:

Disposal Codes	
D02	Landfill
D03	Land Treatment/Application/Farming
D05	Surface Impoundment (to be closed as a Landfill)
D99	Other Disposal

Three lines are provided in this section of the form to accommodate various types of land disposal.

For the purpose of this form, a surface impoundment is considered "final disposal." Quantities of the chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally must not be reported in this section of the form. However, if the impoundment accumulates sludges containing the chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed of (in which case they should be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of the form.

A. Total Release

Only releases of the toxic chemical to the environment for the calendar year are to be reported in this section of the form. The total releases from your facility do not include transfers or shipments of the chemical from your facility for sale or distribution in commerce or of wastes to other facilities for treatment or disposal (see Section 6.1). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released.

A.1 Reporting Ranges

For reports submitted for calendar years 1987, 1988, and 1989 only, you may take advantage of range reporting for releases that are less than 1,000 pounds for the year to an environmental medium. You may mark one of the three boxes, 0, 1-499, or 500-999, corresponding to releases of the chemical to any environmental medium (i.e., any line item); however, you do not have to use these range check boxes. You have the option of providing a specific figure in column A.2 as described below.

For releases of 1,000 pounds or more for the year to any medium, you must provide an estimate in pounds per year in column A.2. Any estimate provided in column A.2 is required to be accurate to no more than two significant figures. Beginning with reports for calendar year 1990, you may not use ranges to report; you must report in column A.2.

A.2 Enter Estimates

You must provide your estimates of releases in pounds for the year in column A.2. This estimate is required to be accurate to no more than two significant figures.

Calculating Releases

To provide the release information required in both Sections A.1 and A.2 in this section of the form, you must use all readily available data (including relevant monitoring data and emissions measurements) collected at your facility pursuant to other provisions of law or as part of routine plant operations, to the extent you have it for the toxic chemical.

When relevant monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released must be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.

No additional monitoring or measurement of the quantities or concentrations of any toxic chemical released into the environment, or of the frequency of such releases, is required for the purpose of completing this form, beyond that which is required under other provisions of law or regulation or as part of routine plant operations.

You must estimate as accurately as possible the quantity in pounds of the chemical or chemical category that is released annually to each environmental medium. Do not include the quantity of components of a waste stream other than the toxic chemical in this estimate.

If the toxic chemical was present at your facility as part of a mixture or trade name product, you must calculate the releases of the chemical only. Do not include releases of the other components of the mixture or trade name product. If you only know about or are only able to estimate the releases of the mixture or trade name product as a whole, you must assume that the toxic chemical is released in proportion to its concentration in the mixture or trade name product. See section 372.30(b) of the reporting rule for further information on how to calculate the concentration and weight of the chemical in the mixture or trade name product.

If you are reporting a chemical category listed in section 372.65(c) of the reporting rule rather than a specific chemical, you must combine the release data for all chemicals in the listed chemical category (e.g., all glycol ethers or all chlorophenols) and report the aggregate amount for that chemical category. Do not report releases of each individual chemical in that category separately. For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol, you should report that your facility releases 11,000 pounds per year of chlorophenols. (Other than for listed chemical categories in section 372.65(c) of the rule, each form must report for an individual chemical.

Listed chemicals with the qualifier "solution," such as sodium sulfate, in concentrations of 1 percent (or 0.1 percent in the case of a carcinogen) or greater, must be factored into threshold and release calculations, because threshold and release amounts relate to the amount of chemical in solution, not the amount of solution.

For metal compound categories (e.g., chromium compounds), report releases of only the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released in each waste type regardless of the chemical form (e.g., as the original salts, chromium ion, oxide, etc.), and exclude any contribution to mass made by other species in the molecule.

B. Basis of Estimate

For each release estimate you are required to indicate the principal method by which the quantity was derived. Enter the letter code to identify the method which applies to the largest portion of the total estimated quantity.

For example, if 40 percent of stack emissions of the reported substance were derived using monitoring data, 30 percent by mass balance, and 30 percent by emission factors, you would enter the code letter "M" for monitoring. The codes are as follows:

M - Based on monitoring data or measurements for the toxic chemical as released to the environment and/or off-site facility.

C - Based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.

E - Based on published emission factors, such as those relating release quantity to throughput or equipment type (e.g., air emissions factors)

O - Based on other approaches such as engineering calculations (e.g., estimating volatilization or solubility using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a wastestream even if the composition of stream before treatment was fully characterized by monitoring data.

If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the toxic chemical, the estimate should be reported as based on engineering calculations or judgment.

C. Percent From Stormwater

This column only relates to Section 5.3 - Discharges to Water. The quantity of the chemical released to any receiving stream or water body in each box in column A must include the amount contributed by stormwater runoff from the facility which contains the chemical. In addition, the percentage of the total quantity (by weight) of the chemical contributed by stormwater must be entered in column C. If your facility has monitoring data on the chemical and an estimate of flow rate, you must use this data to determine percent stormwater.

If your facility does not have periodic measurements of stormwater releases of the chemical but has submitted chemical specific monitoring data in permit applications, then these data must be used to calculate the percent contribution from stormwater. Flow rate data can be estimated by multiplying the annual amount of rainfall times the land area times the runoff coefficient. The runoff coefficient represents the fraction of rainfall that does not infiltrate into the ground but runs off as stormwater. The runoff coefficient is directly related to the land uses located in the drainage area and ranges from 0.5-0.8 for light industrial areas and 0.6-0.9 for heavy industrial areas. Site specific determinations can be calculated using the following formula:

(1 x fractional paved or roofed area) + (0.2 x fractional grass area) + (0.5 x fractional graveled area) = site runoff coefficient

If you have monitored stormwater but did not detect the chemical, enter zero (0) in this space. If your facility has no stormwater monitoring data for the of the chemical, enter no data [N/D] in this space on the form.

6. Transfers of the Chemical in Waste to Off-Site Locations

You must report in this section the total annual quantity of the chemical sent to any of the off-site disposal, treatment, or storage facilities for which you have provided an address in Part II.

Line 6.1 is for transfers to a POTW. Lines 6.2 through 6.4 are provided for transfers to other off-site locations, including privately owned wastewater treatment facilities.

Enter, from Section 2 of Part II, the block number that corresponds to the off-site location to which you transferred waste containing the chemical. If you need additional space (i.e., you ship waste to more than three off-site locations), check the box at the bottom of Section 6 and use the Supplemental Information sheet (Part IV).

A. Total Transferred

You must follow the instructions for providing estimates as presented in the instructions for column A of Section 5 above. You must enter the amount in pounds of only the toxic chemical that is being transferred; do not enter the total poundage of wastes, including mixtures or trade name products containing the chemical. As with Section 5, you may report in ranges only for calendar years 1987, 1988, and 1989.

B. Basis of Estimate

You must identify the basis for your estimate. Follow the instructions and use the same codes as presented in the instructions for column B of Section 5.

C. Type of Treatment/Disposal

You must enter one of the following codes to identify the type of treatment or disposal method used by the off-site location for the chemical being reported. You may have this information in your copy of EPA Form 8O, Item S of the Annual/Biennial Hazardous Waste Treatment, Storage, and Disposal Report (RCRA). Applicable codes for this section are as follows:

M10	Storage Only
M20	Reuse as Fuel/Fuel Blending
M40	Solidification/Stabilization
M50	Incineration/Thermal Treatment
M61	Wastewater Treatment (Excluding POTW)
M69	Other Treatment
M71	Underground Injection
M72	Landfill/Disposal Surface Impoundment
M73	Land Treatment
M79	Other Land Disposal
M90	Other Off-Site Management
M91	Transfer to Waste Broker
M99	Unknown

7. Waste Treatment Methods and Efficiency

In Section 7, you must provide the following information related to the chemical whose releases are being reported: (A) the general wastestream types containing the chemical being reported; (B) the waste treatment methods (if any) used on all wastestreams containing the chemical; (C) the range of concentrations of the chemical in the influent to the treatment method (D) whether sequential treatment is used; (E) the efficiency or effectiveness of each treatment method in removing the chemical; and (F) whether the treatment efficiency figure was based on actual operating data. You must use a separate line in Section 7 for each treatment method used on a wastestream. This section is to be used to report only treatment of wastestreams at your facility, not treatment off-site.

A. General Wastestream

For each waste treatment method report you must indicate the type of wastestream containing the chemical that is treated. Enter the letter code that corresponds to the general wastestream type:

A = Gaseous (including gases, vapors, airborne particulates)
W = Wastewater (aqueous waste)
L = Liquid waste (non-aqueous waste)
S = Solid waste (including sludges and slurries)

If a waste is a mixture of water and organic liquid, you must report it under wastewater unless the organic content exceeds 50 percent. Slurries and sludges containing water must be reported as solid waste if they contain appreciable amounts of dissolved solids, or solids that may settle, such that the viscosity or density of the waste is considerably different from that of process wastewater.

B. Treatment Method

Codes for treatment methods are included in Table I of these instructions. You must enter the code for each treatment method used on a wastestream containing the toxic chemical, regardless of whether this treatment method actually removes the specific chemical. Treatment methods must be reported by type of waste being treated (i.e., gaseous wastes, aqueous wastes, liquid non-aqueous wastes, and solids).

Wastestreams containing the chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to treatment. Report treatment methods that apply to the aggregate wastestream as well as treatment methods that apply to individual wastestreams. If your facility treats various wastewater streams containing the chemical in different ways, the different treatment methods must each be listed separately.

Your facility may have several pieces of equipment performing a similar service. It is not necessary to enter four lines of data to cover four scrubber units, for example, if all four are treating wastes of similar character (e.g. sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differ from one unit to the next, each scrubber must be listed separately.

C. Range of Influent Concentration

The form requires an indication of the range of concentration of the toxic chemical in the wastestream (i.e., the influent) as it typically enters the treatment equipment. You must enter in the space provided one of the following code numbers corresponding to the concentration of the chemical in the influent:

1 = Greater than 1 percent
2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
3 = 1 part per million to 100 parts per million
4 = 1 part per billion to 1 part per million
5 = Less than 1 part per billion

Note that parts per million (ppm) is milligrams/kilogram (mass/mass) for solids and liquids; cubic centimeters/cubic meter (volume/volume) for gases; milligrams/liter for solutions or dispersions of the chemical in water; and milligrams of chemical/kilogram of air for particulates in air. If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million; if in mg/m^3, multiply by 0.773 to obtain ppm. (Note: Factors are for standard conditions of O°C (32°F) and 760 mmHg atmospheric pressure).

D. Sequential Treatment?

You may use various treatment steps in a sequence but only be able to estimate the treatment efficiency of the overall treatment process. If this is the case, you must enter codes for all of the treatment steps in the process. You must check the column D "sequential treatment?" box for all of these steps in the same sequence. With respect to information that must be supplied in columns C and E, you must provide the range of influent concentrations (column C) in connection with the first step of the sequential treatment. Then provide the treatment efficiency (column E) in connection with the last step in the treatment. You do not need to complete C or E for any intermediate step in the sequence.

E. Treatment Efficiency Estimate

In the space provided, you must enter the number that indicates the percentage of the toxic chemical that is removed from the wastestream. The treatment efficiency (expressed as percent removal) represents any destruction, biological degradation, chemical conversion, or physical removal of the chemical from the wastestream being treated. This efficiency must represent the mass or weight percentage of chemical destroyed or removed, not just changes in volume or concentration of the chemical or the wastestream. The efficiency indicated for a treatment method must refer only to the percent conversion or removal of the listed toxic chemical from the wastestream, not the percent conversion or removal of other wastestream constituents (alone or together with the listed chemical), and not the general efficiency of the method for any wastestream.

For some treatments, the percent removal will represent removal by several mechanisms, as in secondary wastewater treatment, where a chemical may evaporate, be biodegraded, or be physically removed in the sludge.

Percent removal must be calculated as follows:

$$\frac{(I - E)}{I} \times 100$$

where I = mass of the chemical in the influent wastestream and E = mass of the chemical in the effluent wastestream.

The mass or weight of chemical in the wastestream being treated must be calculated by multiplying the concentration (by weight) of the chemical in the wastestream times the flow rate. When calculating or estimating percent removal efficiency for various wastestreams, the percent removal must compare the gaseous effluent from treatment to the gaseous influent, the aqueous effluent from treatment to the aqueous influent, and similarly for organic liquid and solid waste. However, some treatment methods may not result in a comparable form of effluent wastestream. Examples are incineration or solidification of wastewater. In these cases, the percent removal of the chemical from the influent wastestream would be reported as 100 percent because the wastestream does not exist in a comparable form after treatment.

Some of the treatments listed in Table I do not destroy, chemically convert, or physically remove the chemical from its wastestream. Some examples include fuel blending and evaporation. For these treatment methods, an efficiency of zero must be reported.

For metal compounds, the reportable concentration and treatment efficiency must be calculated based on the weight of the parent metal and not the weight of the metal compounds. Metals are not destroyed but can only be physically removed or chemically converted from one form into another. The treatment efficiency reported must only represent physical removal of the parent metal from the wastestream, not the percent chemical conversion of the metal compound. If a listed treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported, but the treatment efficiency must be reported as zero.

All data available at your facility must be utilized to calculate treatment efficiency and influent chemical concentration. You are not required to collect any new data for the purposes of this reporting requirement. If data are lacking, estimates must be made using best engineering judgment or other methods.

F. Based on Operating Data?

This column requires you to indicate "Yes" or "No" to whether the treatment efficiency estimate is based on actual operating data. For example, you would check "Yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions. If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, or if you otherwise estimated either the influent or effluent waste comparison or the flow rate, you must check "No."

8. Optional Information on Waste Minimization

Information provided in Part III, Section 8, of the form is optional. This section allows you to identify waste minimization efforts relating to the reported toxic chemical that may not have been reflected in your responses to previous sections of the form.

A. Type of modification

Enter one code from the following list that best describes the type of waste minimization activity:

M1 - Recycling/reuse on-site.
M2 - Recycling/reuse off-site.
M3 - Equipment/technology modifications.
M4 - Process procedure modifications.
M5 - Reformulation/redesign of product.
M6 - Substitution of raw materials.
M7 - Improved housekeeping training, inventory control.
M8 - Other waste minimization technique.

. Quantity of the chemical in the wastestream prior to treatment/ disposal

r the pounds of the toxic chemical in wastes in the
rting year and the pounds in wastes in the year prior
mplementing waste minimization (the "base year").
rnatively, to protect confidential information, you may
to enter only the percentage by which the weight of
chemical in the wastes has changed. This figure
centage) may be calculated using the following
ula:

c chemical in wastes in reporting year -
oxic chemical in wastes in prior year x 100
oxic chemical in wastes in prior year.

e resulting figure may be either negative or positive.

. Index

ter the ratio of reporting-year production to production
the base year. This index should be calculated to most
sely reflect activities involving the chemical. Examples
acceptable indices include:

- Chemical produced in 1987/chemical produced in 1986.
- Paint produced in 1987/paint produced in 1986.
- Appliances coated in 1987/appliances coated in 1986.
- Square feet of solar collector fabricated in 1987/square feet of solar collector fabricated in 1986.
- Value of sales in 1987/value of sales in 1986.

For example, a company manufactures 200,000 pounds of a chemical in 1986 and 250,000 pounds of the same chemical in 1987. The index figure to report would be 1.3 (1.25 rounded). The index provides a means for users of the data to distinguish the effects of changes in business activity from the effects specifically of waste minimization efforts. It is not necessary to indicate the units on which the index is based.

D. Reason for action

Finally, enter the codes from the following list that best describe the reason for initiating the waste minimization effort:

R1 - Regulatory requirement for the waste.
R2 - Reduction of treatment/disposal costs.
R3 - Other process cost reduction.
R4 - Self-initiated program.
R5 - Other (e.g., discontinuation of product, occupational safety, etc.).

TABLE I
TREATMENT CODES

AIR EMISSIONS TREATMENT

A01	Flare
A02	Condenser
A03	Scrubber
A04	Absorber
A05	Electrostatic Precipitator
A06	Mechanical Separation
A07	Other Air Emission Treatment

BIOLOGICAL TREATMENT

B11	Biological Treatment -- Aerobic
B21	Biological Treatment -- Anaerobic
B31	Biological Treatment -- Facultative
B99	Biological Treatment -- Other

CHEMICAL TREATMENT

C01	Chemical Precipitation -- Lime or Sodium Hydroxide
C02	Chemical Precipitation -- Sulfide
C09	Chemical Precipitation -- Other
C11	Neutralization
C21	Chromium Reduction
C31	Complexed Metals Treatment (other than pH Adjustment)
C41	Cyanide Oxidation -- Alkaline Chlorination
C42	Cyanide Oxidation -- Electrochemical
C43	Cyanide Oxidation -- Other
C44	General Oxidation (including Disinfection) -- Chlorination
C45	General Oxidation (including Disinfection) -- Ozonation
C46	General Oxidation (including Disinfection) -- Ozonation
C99	Other Chemical Treatment

INCINERATION/THERMAL TREATMENT

F01	Liquid Injection
F11	Rotary Kiln with Liquid Injection Unit
F19	Other Rotary Kiln
F31	Two Stage
F41	Fixed Hearth
F42	Multiple Hearth
F51	Fluidized Bed
F61	Infra-Red
F71	Fume/Vapor
F81	Pyrolytic Destructor
F82	Wet Air Oxidation
F83	Thermal Drying/Dewatering
F99	Other Incineration/Thermal Treatment

SOLIDIFICATION/STABILIZATION

G01	Cement Processes (including Silicates)
G09	Other Pozzolonic Processes (including Silicates)
G11	Asphaltic Processes
G21	Thermoplastic Techniques
G99	Other Solidification Processes

PHYSICAL TREATMENT

P01	Equalization
P09	Other Blending
P11	Settling/Clarification
P12	Filtration
P13	Sludge Dewatering (non-thermal)
P14	Air Flotation
P15	Oil Skimming
P16	Emulsion Breaking -- Thermal
P17	Emulsion Breaking -- Chemical
P18	Emulsion Breaking -- Other
P19	Other Liquid Phase Separation
P21	Adsorption -- Carbon
P22	Adsorption -- Ion Exchange (other than for recovery/reuse)
P23	Adsorption -- Resin
P29	Adsorption -- Other
P31	Reverse Osmosis (other than for recovery/reuse)
P41	Stripping -- Air
P42	Stripping -- Steam
P49	Stripping -- Other
P51	Acid Leaching (other than for recovery/reuse)
P61	Solvent Extraction (other than recovery/reuse)
P99	Other Physical Treatment

RECOVERY/REUSE

R01	Reuse as Fuel -- Industrial Kiln
R02	Reuse as Fuel -- Industrial Furnace
R03	Reuse as Fuel -- Boiler
R04	Reuse as Fuel -- Fuel Blending
R09	Reuse as Fuel -- Other
R11	Solvents/Organics Recovery -- Batch Still Distillation
R12	Solvents/Organics Recovery -- Thin-Film Evaporation
R13	Solvents/Organics Recovery -- Fractionation
R14	Solvents/Organics Recovery -- Solvent Extraction
R19	Solvents/Organics Recovery -- Other
R21	Metals Recovery -- Electrolytic
R22	Metals Recovery -- Ion Exchange
R23	Metals Recovery -- Acid Leaching
R24	Metals Recovery -- Reverse Osmosis
R26	Metals Recovery -- Solvent Extraction
R29	Metals Recovery -- Other
R99	Other Reuse or Recovery

FINDING AIDS

A list of CFR titles, subtitles, chapters, subchapters and parts and an alphabetical list of agencies publishing in the CFR are included in the CFR Index and Finding Aids volume to the Code of Federal Regulations which is published separately and revised annually.

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Title 40 was established at 36 FR 12213, June 29, 1971. Subchapter J, consisting of Parts 300 to 399, was established at 47 FR 31202, July 16, 1982, and contained regulations formerly found at 40 CFR Part 1510. For the period before January 1, 1973, see the "List of CFR Sections Affected, 1964-1972," which is published in a separate volume.

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